

00001-01 | UNITED STATES DISTRICT COURT
 00001-02 | NORTHERN DISTRICT OF OHIO
 00001-03 | EASTERN DIVISION
 00001-04 | -----
 00001-05 | IRON WORKERS LOCAL UNION No.)
 00001-06 | 17 INSURANCE FUND and its)
 00001-07 | Trustees, et al.,) No. 1:97CV1422
 00001-08 | Plaintiffs,) VOLUME I
 00001-09 | vs.)
 00001-10 | PHILIP MORRIS, INC., et al.,)
 00001-11 | Defendants.)
 00001-12 | -----
 00001-13 | Deposition of JOHN H. REYNOLDS, IV,
 00001-14 | at 200 West 2nd Street, 12th Floor,
 00001-15 | Winston-Salem, North Carolina, commencing
 00001-16 | at 9:04 A.M., Wednesday, January 6, 1999,
 00001-17 | before Sydney C. Silva, Registered
 00001-18 | Professional Reporter and Notary Public.
 00001-19 | PAGES 1 - 248

00002-01 | APPEARANCES OF COUNSEL:
 00002-02 | FOR THE PLAINTIFFS:
 00002-03 | MILBERG WEISS BERSHAD HYNES &
 00002-04 | LERACH, LLP
 00002-05 | BY: SCOTT H. SAHAM, ESQ.
 00002-06 | 600 West Broadway
 00002-07 | 1800 One America Plaza
 00002-08 | San Diego, California 92101-3356
 00002-09 | (619) 231-1058
 00002-10 | FOR THE DEFENDANT R. J. REYNOLDS
 00002-11 | TOBACCO COMPANY:
 00002-12 | WOMBLE CARLYLE SANDRIDGE & RICE, PLLC
 00002-13 | BY: CHRISTOPHER A. KREINER, ESQ.
 00002-14 | 200 West Second Street
 00002-15 | Winston-Salem, North Carolina 27102
 00002-16 | (336) 721-3748

00003-01 | APPEARANCES OF COUNSEL (CONTINUED):
 00003-02 | FOR THE WITNESS:
 00003-03 | BELL, DAVIS & PITT, P A.
 00003-04 | BY: WILLIAM K. DAVIS, ESQ.
 00003-05 | 635 West Fourth Street
 00003-06 | Winston-Salem, North Carolina 27102
 00003-07 | (336) 722-3700
 00003-08 | ALSO PRESENT:
 00003-09 | RALEIGH ELLISON, VIDEOGRAPHER

00004-01 | THE VIDEOGRAPHER: The time is 9:04,
 00004-02 | beginning Tape 1 of the deposition of John
 00004-03 | Reynolds taken in the matter of Ironworkers versus
 00004-04 | Philip Morris and others.
 00004-05 | If the taking attorney will
 00004-06 | introduce himself for the audio record.
 00004-07 | MR. SAHAM: Scott Saham of Milberg,
 00004-08 | Weiss for the Plaintiff.
 00004-09 | MR. KREINER: Christopher Kreiner of
 00004-10 | Womble Carlyle Sandridge & Rice representing R.J.
 00004-11 | Reynolds Tobacco.
 00004-12 | MR. DAVIS: Bill Davis, Bell, Davis
 00004-13 | and Pitt, personal counsel to the witness.
 00004-14 | JOHN H. REYNOLDS, IV,
 00004-15 | having been first duly sworn, testified as

00004-16| follows:
00004-17| EXAMINATION
00004-18| BY MR. SAHAM:
00004-19| Q. Good morning, Dr. Reynolds.
00004-20| A. Good morning.
00004-21| Q. As I mentioned, my name is Scott
00004-22| Saham, I represent a class of union health and
00004-23| welfare trust funds in the state of Ohio in their
----- PAGE00005 -----
00005-01| litigation against the tobacco industry.
00005-02| Could you please state and spell
00005-03| your name for the record.
00005-04| A. John H Reynolds, IV, J-O-H-N, H.,
00005-05| R-E-Y-N-O-L-D-S.
00005-06| Q. Just going over the ground rules,
00005-07| today we're proceeding under the local rules for
00005-08| the Northern District of Ohio. They are
00005-09| particularly stringent in that district regarding
00005-10| speaking objections by counsel. The format will
00005-11| be I will ask you a question, your counsel will
00005-12| interpose an objection -- which are limited to
00005-13| objection to form or to instruct you not to answer
00005-14| if the question pertains to privileged matter.
00005-15| The objection itself should be of really no
00005-16| interest to you in any way.
00005-17| And that will be the normal rhythm,
00005-18| my question, counsel's objection if one exists,
00005-19| and then your answer. Do you understand that?
00005-20| A. Yes, I do.
00005-21| MR. DAVIS: Let me say for the
00005-22| record the subpoena that came to him is from the
00005-23| Middle District of North Carolina. I don't think
00005-24| it changes what you just said except that the
00005-25| Middle District rules may have some application
----- PAGE00006 -----
00006-01| also. But again, I don't think we have a problem
00006-02| here.
00006-03| MR. SAHAM: Okay.
00006-04| BY MR. SAHAM:
00006-05| Q. Now, Dr. Reynolds, have you ever had
00006-06| your deposition taken before?
00006-07| A. Yes.
00006-08| Q. On how many occasions?
00006-09| A. Once.
00006-10| Q. And was that in the matter of Arch
00006-11| et al v. the American Tobacco Company et al?
00006-12| A. I believe it was.
00006-13| MR. SAHAM: Could you mark this as
00006-14| Exhibit one, please.
00006-15| (Deposition Exhibit No. 1 was
00006-16| marked for identification and is
00006-17| bound separately.)
00006-18| MR. SAHAM: With the exception of
00006-19| this rather large exhibit, I do have copies for
00006-20| counsel.
00006-21| BY MR. SAHAM:
00006-22| Q. Dr. Reynolds, do you remember
00006-23| sitting for a deposition in the action entitled
00006-24| "Steven R. Arch et al v. The American Tobacco
00006-25| Company" in July of 1997?
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00007-01| A. Yes.
00007-02| Q. And do you remember during the

00007-03 | course of that deposition being sworn in and
00007-04 | swearing to tell the truth with respect to your
00007-05 | testimony?
00007-06 | A. Yes.
00007-07 | Q. And did you in fact testify
00007-08 | truthfully on July 16 and 17?
00007-09 | A. Yes.
00007-10 | Q. Now could you please take a look at
00007-11 | what has been marked as Exhibit 1.
00007-12 | A. This thing here? Yes.
00007-13 | Q. Does that look like the transcript
00007-14 | of the deposition from July 16 and 17, 1997?
00007-15 | A. (Witness peruses document.) Yes, it
00007-16 | does.
00007-17 | MR. KREINER: Counsel, is that just
00007-18 | the transcript or the exhibits as well?
00007-19 | MR. SAHAM: That's the transcript as
00007-20 | well as the exhibits. And just to hopefully short
00007-21 | circuit the need to go through a lot of background
00007-22 | information, we'll enter that and we may refer
00007-23 | through to it throughout the deposition.
00007-24 | BY MR. SAHAM:
00007-25 | Q. Other than the deposition in Arch,

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00008-01 | have you ever had your deposition taken before?
00008-02 | A. No.
00008-03 | Q. Just to go over a few more of the
00008-04 | ground rules to help to hopefully allow the
00008-05 | deposition to run as smoothly as possible, the
00008-06 | court reporter, as you probably recall, can only
00008-07 | record a verbal response to my questions. So a
00008-08 | shake of the head or a huh-uh or uh-huh response
00008-09 | to a question makes it difficult; so it would be
00008-10 | best for you to respond yes or no if the question
00008-11 | calls for that type response. Do you understand
00008-12 | that?
00008-13 | A. Yes.
00008-14 | Q. Additionally, the court reporter can
00008-15 | only take down one person speaking at a time, so
00008-16 | it would be most helpful if you could wait until I
00008-17 | finish a question before you start to respond and
00008-18 | I will hopefully provide the same courtesy to you.
00008-19 | Do you understand that?
00008-20 | A. Yes.
00008-21 | Q. Additionally, tell me if I'm going
00008-22 | too fast or if you don't understand a question.
00008-23 | Because if you don't tell me that you don't
00008-24 | understand a question, I'm going to assume for
00008-25 | purposes of this deposition that you understood

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00009-01 | the question. Is that clear?
00009-02 | A. Yes.
00009-03 | Q. Dr. Reynolds, did you review any
00009-04 | documents in preparation for this deposition?
00009-05 | A. Yes.
00009-06 | Q. What documents did you review?
00009-07 | A. A series of daytimers that I had
00009-08 | that were asked in the subpoena to be produced.
00009-09 | Q. Daytimers --
00009-10 | A. Yes.
00009-11 | Q. -- you mean calendars or planners?
00009-12 | A. Yes, they're -- I'm sorry, yes,
00009-13 | they're calendars, planners.

00009-14| Q. And that's something you reviewed
00009-15| because you felt it was responsive to the
00009-16| deposition notice that you obtained?
00009-17| A. Yes. And also my counsel asked me
00009-18| to look through them.
00009-19| Q. Is that something you brought with
00009-20| you today?
00009-21| A. Yes.
00009-22| Q. And that's in that box I saw you
00009-23| carry in?
00009-24| A. Yes.
00009-25| Q. Is there anything else in that box

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00010-01| other than the day planners?
00010-02| A. Yes.
00010-03| Q. What else is in there?
00010-04| A. Several books; several reprints of
00010-05| scientific articles; and two computer storage
00010-06| diskettes; and some Rolodex cards.
00010-07| Q. Is that the full contents of the
00010-08| box?
00010-09| A. I believe that it is.
00010-10| Q. Was there anything else in there
00010-11| prior to your meeting with counsel that was
00010-12| removed?
00010-13| A. No. I mean, the original contents
00010-14| of the box had nothing to do with any of that, it
00010-15| was a Christmas present or something.
00010-16| Q. Okay. But as far as what you
00010-17| brought in this morning or in your meeting with
00010-18| counsel?
00010-19| A. Nothing.
00010-20| MR. SAHAM: And counsel, I guess it
00010-21| is my understanding is that going to be produced,
00010-22| that contents of the box?
00010-23| MR. DAVIS: It's right here, you can
00010-24| have it.
00010-25| MR. SAHAM: Okay.

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00011-01| MR. KREINER: Those are the
00011-02| originals.
00011-03| MR. DAVIS: That's the originals.
00011-04| MR. SAHAM: So we can take the
00011-05| originals --
00011-06| MR. DAVIS: No, no. You asked him
00011-07| to produce them, he's produced them, so.
00011-08| MR. SAHAM: Okay. That means, I
00011-09| guess, after the deposition we'll make
00011-10| arrangements to have a copy service come in and
00011-11| duplicate those? Is that a problem?
00011-12| MR. DAVIS: Whatever arrangements
00011-13| you make is fine. He was ordered or asked to
00011-14| produce them and he has; and if there is going to
00011-15| be some arrangement, we'll, if you want copies,
00011-16| you can make arrangements to get copies. We'll do
00011-17| something like that.
00011-18| MR. SAHAM: That would be --
00011-19| MR. KREINER: We can arrange. It is
00011-20| my understanding that Reynolds did, R.J. Reynolds,
00011-21| the company, did file an objection to the
00011-22| production of these to the extent they called for
00011-23| privileged materials and overbreadness; I don't
00011-24| know if there has been a ruling on that. But we

|00011-25| are prepared to produce what's in the box and you
----- PAGE00012 -----
|00012-01| can make copies. I'm sure we can arrange to have
|00012-02| copies made.
|00012-03| MR. SAHAM: All right. I'd
|00012-04| appreciate that, thank you. Perhaps at one of the
|00012-05| breaks I can take a look at them.
|00012-06| BY MR. SAHAM:
|00012-07| Q. Dr. Reynolds, briefly, what's your
|00012-08| educational background?
|00012-09| A. I have a Bachelor of Arts Degree in
|00012-10| Chemistry and Mathematics from Shorter College,
|00012-11| Rome, Georgia. I have a Masters Degree in
|00012-12| Chemistry from Clemson University, Clemson, South
|00012-13| Carolina. And I have a Doctor of Philosophy
|00012-14| Degree from Clemson University.
|00012-15| Q. Is that also in Chemistry?
|00012-16| A. Yes, it is.
|00012-17| Q. And are you currently retired?
|00012-18| A. Yes, I am.
|00012-19| Q. And when did you retire from R.J.
|00012-20| Reynolds?
|00012-21| A. I officially retired at the end of
|00012-22| July of this year -- of last year.
|00012-23| Q. '97?
|00012-24| A. '98.
|00012-25| Q. '98. That's right, I have to get
----- PAGE00013 -----

|00013-01| used to that.
|00013-02| A. Yes.
|00013-03| Q. And have you been working in any
|00013-04| capacity since your retirement from Reynolds? And
|00013-05| when I refer to Reynolds, I'm speaking to R.J.
|00013-06| Reynolds.
|00013-07| A. Right, I understand that. No, I
|00013-08| haven't.
|00013-09| Q. And how many years were you employed
|00013-10| with Reynolds?
|00013-11| A. Slightly over 28 years.
|00013-12| Q. Did you speak with anyone prior to
|00013-13| the deposition to prepare for this deposition?
|00013-14| A. To my counsel and to Mr. Kreiner.
|00013-15| Q. Anyone else?
|00013-16| A. I told my wife that I was going to
|00013-17| be deposed, and told my father-in-law and my
|00013-18| daughter.
|00013-19| MR. SAHAM: Could we have this
|00013-20| marked as Exhibit 2, please. Unfortunately, I
|00013-21| only have one extra copy.
|00013-22| (Deposition Exhibit No. 2 was
|00013-23| marked for identification and is
|00013-24| bound separately.)
|00013-25| MR. KREINER: Counsel, If you would
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|00014-01| just permit me briefly, I have a computer here
|00014-02| that allows me to identify documents that the
|00014-03| company continues to assert privilege on, if you
|00014-04| can just let me run this quickly, it will take
|00014-05| just a moment --
|00014-06| MR. SAHAM: Certainly.
|00014-07| MR. KREINER: -- to see. On it's
|00014-08| face, it doesn't look...
|00014-09| MR. SAHAM: If you could give to it

00014-10 | the witness, he can start to look at it.
00014-11 | BY MR. SAHAM:
00014-12 | Q. Dr. Reynolds, could you please take
00014-13 | a look at what has been marked as Plaintiff's
00014-14 | Exhibit 2, or I should say Reynolds Exhibit 2.
00014-15 | A. (Witness peruses document.)
00014-16 | Q. And for the record, Exhibit 2 is an
00014-17 | RJR interoffice memorandum dated May 5, 1983; the
00014-18 | subject is "Interview with John L. McKenzie"; it's
00014-19 | directed to the Sensory Monitoring Committee, and
00014-20 | it's from Mary E. Stowe and J. P. Dickerson.
00014-21 | Do you recognize this document,
00014-22 | Dr. Reynolds?
00014-23 | MR. KREINER: Excuse me, counsel.
00014-24 | Were you finished looking at the document?
00014-25 | THE WITNESS: No, I'm not finished

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00015-01 | looking at it.
00015-02 | MR. SAHAM: Take as much time as you
00015-03 | need. I apologize.
00015-04 | THE WITNESS: (Witness peruses
00015-05 | document.) And your question was?
00015-06 | BY MR. SAHAM:
00015-07 | Q. Do you recognize in document?
00015-08 | A. I don't recall it.
00015-09 | Q. Were you a member of the Sensory
00015-10 | Modeling Committee in 1983?
00015-11 | A. I believe that I was.
00015-12 | Q. And what in fact was the Sensory
00015-13 | Modeling Committee?
00015-14 | A. To the best of my recollection, it
00015-15 | was a group of individuals who wanted to find ways
00015-16 | to predict the sensory properties of cigarettes.
00015-17 | Q. And what do you mean by "sensory
00015-18 | properties"?
00015-19 | A. How they tasted or felt to the mouth
00015-20 | of the smoker.
00015-21 | Q. Did you have any reason to believe
00015-22 | that you didn't receive this document in May of
00015-23 | 1983, given that you're, you have a cc?
00015-24 | A. No.
00015-25 | Q. This is the type of document you

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00016-01 | would generally get in the ordinary course of
00016-02 | business?
00016-03 | A. Yes.
00016-04 | Q. Was there a general purpose as to or
00016-05 | general purpose for the Sensory Modeling Committee
00016-06 | other than what you just described?
00016-07 | A. We wanted to find ways to make
00016-08 | cigarettes taste better and to be able to
00016-09 | understand what consumers liked about the way
00016-10 | cigarettes tasted was the object, as far as I can
00016-11 | recall.
00016-12 | Q. And what components would you
00016-13 | ascribe to the word "taste"?
00016-14 | A. Taste involves the response of the
00016-15 | taste receptors in the mouth -- and I'm not a
00016-16 | physiologist so you'll have to.
00016-17 | Q. You're talking about --
00016-18 | A. Talking about how the cigarette
00016-19 | actually tasted to the individual who was smoking
00016-20 | it --

00016-21| Q. Sort of like --
00016-22| A. -- how it smelled. Flavor.
00016-23| Q. Flavor. Similar to food?
00016-24| A. Right.
00016-25| Q. And in the second full paragraph of

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00017-01| this document, the ultra-low tar study which is
00017-02| referenced, do you recall the ultra-low tar study
00017-03| which presumably was conducted in 1983 or was
00017-04| being conducted in 1983?
00017-05| A. Only vaguely.
00017-06| Q. What is your recollection of the
00017-07| ultra-low tar study?
00017-08| A. Basically it is what it, I, we did a
00017-09| number of studies on cigarettes of various kinds.
00017-10| And what I'm going by is this paragraph that looks
00017-11| like it is marked B, ultra-low tar study. And
00017-12| that's what I can recollect now is what I'm
00017-13| reading.
00017-14| Q. Not, nothing beyond that?
00017-15| A. Not specifically, no, sir.
00017-16| Q. And this document, the subject of
00017-17| this document is an interview with John L.
00017-18| McKenzie. Who is John L. McKenzie?
00017-19| A. He, at that time he was an employee
00017-20| of R.J. Reynolds Tobacco Company and I think he
00017-21| worked in 1983 in the Product Development
00017-22| Department.
00017-23| Q. And why is it this committee was
00017-24| interviewing John McKenzie?
00017-25| A. I don't know.

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00018-01| Q. At the bottom of Page 1 where it
00018-02| states, "John contributed the following 'general
00018-03| perceptions' on the effects of specific cigarette
00018-04| variables on smoking quality," is that referring
00018-05| to John McKenzie, to the extent that you know?
00018-06| A. To the extent that I know, since it
00018-07| is entitled "Interview with John McKenzie," that
00018-08| that's who they are talking about is Mr. McKenzie.
00018-09| Q. But the "John" is not you?
00018-10| A. No, the "John" is not me, I don't
00018-11| think.
00018-12| Q. Turn your attention to the second
00018-13| page, the list of Mr. McKenzie -- or presumably
00018-14| the list of Mr. McKenzie under the statement
00018-15| "These are either ones he believes or ones he
00018-16| thinks are generally believed," and then he, he
00018-17| lists several items.
00018-18| Do you know what that's referring
00018-19| to?
00018-20| A. Only to the extent that the subject
00018-21| is described in the head of that paragraph.
00018-22| Q. Well, when he is referring to
00018-23| "general perceptions," do you know general
00018-24| perceptions of whom are being referred to?
00018-25| A. No, I don't.

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00019-01| Q. Turn to the second page, the second
00019-02| bullet point, "Formaldehyde is a major smoke
00019-03| irritant." Do you agree with that statement?
00019-04| A. Formaldehyde is a smoke component.
00019-05| Whether or not it is a major smoke irritant, I

00019-06 | don't know.
00019-07 | Q. But that was, that was a component
00019-08 | in R.J. Reynolds cigarettes back in '83?
00019-09 | A. It's, it's a component of cigarette
00019-10 | smoke.
00019-11 | Q. Today as well?
00019-12 | A. As far as I know.
00019-13 | Q. The fifth bullet point, "Tar per
00019-14 | puff is important to perception," do you agree
00019-15 | with that statement?
00019-16 | A. I believe that I do, yes.
00019-17 | Q. The next bullet point,
00019-18 | "Sugar/nicotine ratios are important to strength,"
00019-19 | do you agree with that statement?
00019-20 | A. I don't, I don't, I don't know
00019-21 | whether that's true or not.
00019-22 | Q. Are sugar/nicotine ratios a
00019-23 | component of strength as you would define it?
00019-24 | A. I'm not sure how the sugar/nicotine
00019-25 | ratio is, is related to strength.

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00020-01 | Q. How would you define strength?
00020-02 | A. Well, this is, this is
00020-03 | Mr. McKenzie's response. When I think of strength
00020-04 | in terms of cigarette, it's the, it's the strength
00020-05 | of the flavor.
00020-06 | Q. And using flavor in the same sense
00020-07 | that --
00020-08 | A. Yes, yes, as a food or a drink, yes.
00020-09 | Q. Would strength have any relationship
00020-10 | to nicotine in your mind?
00020-11 | A. It might.
00020-12 | Q. And in what way?
00020-13 | A. Nicotine is, does have a flavor; and
00020-14 | it is usually perceived as -- I don't necessarily
00020-15 | use the word "strong," but certainly it has a
00020-16 | very, it is impactful. That is, it is perceived
00020-17 | as being irritating in the mouth. So yes, it
00020-18 | could be an impact, you know, related to strength
00020-19 | in that, in that way.
00020-20 | Q. I would like to call your attention
00020-21 | down to the fourth bullet point from the bottom of
00020-22 | the second page, "Ammonia controls smoke pH and
00020-23 | smoke pH is important to perception."
00020-24 | Do you agree with that statement?
00020-25 | A. Not entirely.

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00021-01 | Q. Which portion do you agree with?
00021-02 | A. I, I believe that smoke pH is
00021-03 | important to perception.
00021-04 | Q. And how is smoke pH important to
00021-05 | perception?
00021-06 | A. Normally, cigarettes that have high
00021-07 | pH are perceived as being more, as being stronger.
00021-08 | Q. And again with respect to flavor?
00021-09 | A. Yes, and with respect to flavor.
00021-10 | Q. Would it be strong -- would high pH
00021-11 | cigarettes be stronger in any other way?
00021-12 | MR. KREINER: Objection, vague.
00021-13 | A. I believe mostly in regard to
00021-14 | flavor. And if irritation is a, is a, is a
00021-15 | component of flavor, which some people in the
00021-16 | taste end believe it is, yes, it could be stronger

00021-17 | in that way, too.
00021-18 | Q. Now in 1983 was R.J. Reynolds using
00021-19 | ammonia in its cigarette manufacturing process?
00021-20 | A. I don't know.
00021-21 | Q. Did you personally conduct any
00021-22 | research regarding the use of ammonia in the
00021-23 | cigarette manufacturing process?
00021-24 | A. No.
00021-25 | Q. Were you aware of anyone else at
----- PAGE00022 -----
00022-01 | R.J. Reynolds conducting research regarding the
00022-02 | use of ammonia in the cigarette manufacturing
00022-03 | process?
00022-04 | A. In specifically in 1983, I'm not, I
00022-05 | don't know. But I know that ammonia was used in
00022-06 | certain processes.
00022-07 | Q. Which processes were those?
00022-08 | A. I knew that it was used in the
00022-09 | so-called denicotinization process.
00022-10 | Q. Could you describe that process for
00022-11 | me?
00022-12 | A. I'm not a tobacco process expert and
00022-13 | I'm not an expert in all the things they did, but
00022-14 | my understand is that there was a process
00022-15 | developed to remove nicotine from tobacco and that
00022-16 | ammonia was used in that process.
00022-17 | Q. And then was the nicotine that was
00022-18 | removed, was it your understanding that was used
00022-19 | in a reconstituted tobacco sheet?
00022-20 | MR. KREINER: Objection, lack of
00022-21 | foundation, assumes facts not in evidence.
00022-22 | A. I don't know that the nicotine
00022-23 | removed from tobacco was used in, all of it, all
00022-24 | of it used in the, in the manufacture of sheet.
00022-25 | Q. Would you agree that this process or
----- PAGE00023 -----
00023-01 | ammoniation process was used to increase the
00023-02 | amount of free nicotine in cigarette smoke?
00023-03 | MR. KREINER: Objection, lack of
00023-04 | foundation, assumes facts not in evidence.
00023-05 | A. Would you repeat that, I'm sorry,
00023-06 | I'm not sure I understand that.
00023-07 | Q. Would you agree that this process
00023-08 | whereby ammonia was used in the cigarette
00023-09 | manufacturing process was used to increase the
00023-10 | amount of free nicotine in cigarette smoke?
00023-11 | MR. KREINER: Same objection.
00023-12 | Additionally, vague and ambiguous.
00023-13 | A. The process that I described to you,
00023-14 | which was denicotinization of tobacco, was not
00023-15 | used to increase the amount of nicotine in smoke.
00023-16 | Q. What about the amount of free
00023-17 | nicotine in smoke?
00023-18 | MR. KREINER: Same objections.
00023-19 | A. The denicotinization process as far
00023-20 | as I understand it was used to remove nicotine
00023-21 | from tobacco. Whether -- and I don't know that it
00023-22 | had anything to do with free nicotine.
00023-23 | Q. What was your understanding as to
00023-24 | why this denicotinization process was being used
00023-25 | to remove nicotine from tobacco?
----- PAGE00024 -----
00024-01 | A. Tobacco is a natural product and the

00024-02| amount of nicotine that is in the leaf as bought
00024-03| varies from year to year owing to agricultural and
00024-04| climate -- agricultural practices, I'm sorry, and
00024-05| climate.

00024-06| And it is my understanding that when
00024-07| some tobaccos were purchased, they would be very
00024-08| high in nicotine; and to be able to utilize those
00024-09| tobaccos in the product, that amount had to be
00024-10| reduced; and that was what it was for, was to
00024-11| remove nicotine from those tobaccos.

00024-12| Q. Is it correct that an individual
00024-13| cigarette, cigarette brand, is designed to yield a
00024-14| specific amount of nicotine?

00024-15| MR. KREINER: Objection, lack of
00024-16| foundation.

00024-17| A. There is certainly specifications
00024-18| that if we say a cigarette yields this amount of
00024-19| nicotine and/or tar that it must yield those
00024-20| amounts.

00024-21| Q. And that would, would have to remain
00024-22| constant from year to year for a particular
00024-23| product?

00024-24| A. That would be the, that would be
00024-25| what you would want to happen, yes.

----- PAGE00025 -----

00025-01| Q. So because of the varying amount of
00025-02| naturally occurring nicotine in tobacco, is it
00025-03| correct that the nicotine yield of a particular
00025-04| cigarette needs to be controlled in the
00025-05| manufacturing process?

00025-06| A. It needs to be controlled by
00025-07| utilizing blending techniques, which I presume you
00025-08| could call part of the manufacturing process.

00025-09| Q. Are there other techniques that
00025-10| could be used to control the level of nicotine in
00025-11| an individual cigarette?

00025-12| A. In an individual cigarette?

00025-13| Q. Within a product line.

00025-14| A. Within a product line? Do you
00025-15| mean --

00025-16| Q. Well, let me rephrase that.
00025-17| If you have a particular Camel and
00025-18| the ones being manufactured on a particular day,
00025-19| to control or to specify the yield of the
00025-20| individual product being manufactured as the
00025-21| result of a certain manufacturing lot.

00025-22| MR. KREINER: Objection, vague and
00025-23| ambiguous.

00025-24| A. I'm sorry, I lost the thread of your
00025-25| question. Would you --

----- PAGE00026 -----

00026-01| Q. Okay. I'll rephrase that for you.
00026-02| Well, I guess I'll just strike that
00026-03| question entirely.

00026-04| Other than blending, are any other
00026-05| procedures used by R.J. Reynolds to assure that a
00026-06| particular cigarette within a manufacturing or
00026-07| within a brand will yield a specified amount of
00026-08| nicotine?

00026-09| MR. KREINER: Objection, assumes
00026-10| facts not in evidence, vague. Lack of foundation.

00026-11| A. And the question is: To maintain
00026-12| the specification for tar and nicotine of a

00026-13| particular cigarette line, are there any other
00026-14| techniques than blending that are used? Is that
00026-15| the question?
00026-16| Q. Correct.
00026-17| A. The described process of
00026-18| denicotinization is used; and as far as I know,
00026-19| that's all that is done.
00026-20| Q. Could other facets of the cigarette
00026-21| also affect yield, such as a filter? Could the
00026-22| filter affect yield?
00026-23| A. Yes.
00026-24| Q. Could the paper affect yield?
00026-25| A. Yes.

----- PAGE00027 -----

00027-01| Q. Any other components of the
00027-02| cigarette that could affect the tar and nicotine
00027-03| yield of the cigarette?
00027-04| A. Well, the particular tobaccos that
00027-05| were utilized and any, any other processing that
00027-06| was done to the tobaccos.
00027-07| Q. During the time that you worked at
00027-08| Reynolds, was it your understanding that Reynolds
00027-09| used a reconstituted tobacco process in the
00027-10| manufacturing of some of its cigarettes?
00027-11| A. Yes.
00027-12| Q. And did this process -- was this
00027-13| process used to guarantee that particular
00027-14| cigarettes would have yields of tar and nicotine
00027-15| consistent with their design parameters?
00027-16| MR. KREINER: Objection, assumes
00027-17| facts not in evidence.
00027-18| A. The, the reconstituted tobacco sheet
00027-19| was treated as a blend component just like it was
00027-20| tobacco; and to that extent, its utilization was
00027-21| part of the whole blending operation.
00027-22| Q. And one of the purposes of the
00027-23| blending operation as you have just described it
00027-24| was to control the tar and nicotine yield of an
00027-25| individual cigarette lot?

----- PAGE00028 -----

00028-01| MR. KREINER: Objection, lack of
00028-02| foundation, mischaracterizes testimony.
00028-03| A. The blend of the cigarette was
00028-04| decided by the product developer. And he or she
00028-05| chose whichever kinds of tobaccos -- whether they
00028-06| were different, different varieties or whether it
00028-07| was reconstituted sheet -- to achieve the tar and
00028-08| nicotine levels of that particular product. And
00028-09| then that was maintained by the utilization of
00028-10| those different tobaccos.
00028-11| Q. In the denicotinization process as
00028-12| you just described it, would you consider that a
00028-13| component of blending as well?
00028-14| A. The tobacco that was treated in that
00028-15| fashion would have been used as a blend component.
00028-16| Q. So that would be a step prior to the
00028-17| blending process, the denicotinization process?
00028-18| A. Yeah, for the utilization of that
00028-19| particular tobacco, it would have been denic'd
00028-20| before it was used as a blend component, right.
00028-21| Q. Do you agree with Mr. McKenzie's
00028-22| second-from-last bullet point that, "Ammonia
00028-23| increases impact"?

00028-24| MR. KREINER: Objection as to the
00028-25| characterization of the document.

----- PAGE00029 -----

00029-01| A. I don't know that it does.
00029-02| Q. And how would you define "impact"?
00029-03| A. That's a sensory term, again in
00029-04| flavor. To my knowledge, it is related to the
00029-05| strength of the flavor that one perceives when you
00029-06| smoke a cigarette.
00029-07| Q. Is the term "impact" used in any
00029-08| relation to nicotine?
00029-09| A. As far as I know it is believed that
00029-10| nicotine affects impact.
00029-11| Q. Is nicotine an important component
00029-12| in affecting impact?
00029-13| A. It is a component in impact.
00029-14| Q. Are there any components more
00029-15| important than nicotine that you could recall?
00029-16| A. Well, the general conglomerate of
00029-17| materials that we talk about as tar is certainly
00029-18| quite important.
00029-19| Q. Other than tar and nicotine,
00029-20| anything else that comes to mind?
00029-21| A. Well, if you understand that tar is
00029-22| a complex mixture and when I use that term I'm
00029-23| talking about all those things within it,
00029-24| certainly tar and nicotine and possibly some of
00029-25| the gas phase components have something to do with

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00030-01| impact.
00030-02| Q. Have you ever heard the term "free
00030-03| nicotine" used before?
00030-04| A. Yes, I have.
00030-05| Q. What does "free nicotine" refer to?
00030-06| MR. KREINER: Objection, any
00030-07| context?
00030-08| MR. SAHAM: I guess would I limit it
00030-09| to cigarettes.
00030-10| A. Nicotine is a chemical base, and it
00030-11| can be combined into salts with acids like any
00030-12| base can.
00030-13| And in tobacco, in and of itself, it
00030-14| is believed that a lot of the nicotine is in fact
00030-15| in salt form. And a chemist, I believe, would say
00030-16| tobacco -- nicotine is not in the salt form is,
00030-17| quote -- excuse me, free nicotine.
00030-18| Q. Is it correct that free nicotine is
00030-19| absorbed into the human body more readily than the
00030-20| salt-based nicotine?
00030-21| MR. KREINER: Objection, lack of
00030-22| foundation, assumes facts not in evidence.
00030-23| A. I have heard that theory espoused.
00030-24| Q. Who did you hear that theory
00030-25| espoused by?

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00031-01| A. I can't recall the specific
00031-02| individuals.
00031-03| Q. Individuals at Reynolds?
00031-04| A. Many individual people at Reynolds,
00031-05| and, as I recall, there's -- it, it, I can't
00031-06| recall specific literature that says that, but my
00031-07| impression is that there is probably literature
00031-08| that talks about nicotine absorption and whether

00031-09 | it is free or bound or whatever.
00031-10 | Q. Do you have any reason to believe
00031-11 | that that is incorrect that free nicotine is
00031-12 | absorbed more readily?
00031-13 | MR. KREINER: Same objections.
00031-14 | A. I don't know the -- I'm not a
00031-15 | physiologist, so I don't know the actual
00031-16 | physiological processes that are involved in the
00031-17 | absorption of nicotine. And I'm not sure that it
00031-18 | is or isn't absorbed more readily or faster, if
00031-19 | that was the, if that was the term you used.
00031-20 | Q. Have you ever seen any literature to
00031-21 | the contrary?
00031-22 | A. No.
00031-23 | Q. Ever hear anyone at Reynolds make a
00031-24 | statement to the contrary?
00031-25 | A. Well, there was a great -- there
----- PAGE00032 -----
00032-01 | were more, there was more than one school of
00032-02 | thought about nicotine absorption and whether or
00032-03 | not in fact free nicotine as I described it or as
00032-04 | it is calculated in some way really had anything
00032-05 | to do with the absorption process at all.
00032-06 | Q. Ammonia is an acid; is that correct?
00032-07 | A. No, sir.
00032-08 | Q. Ammonia is a base?
00032-09 | A. Yes, sir.
00032-10 | Q. So if nicotine became more base --
00032-11 | strike that.
00032-12 | Lowering the pH of nicotine would
00032-13 | increase the amount of free nicotine available; is
00032-14 | that correct?
00032-15 | MR. KREINER: Objection, lack of
00032-16 | foundation, assumes facts not in evidence, vague
00032-17 | and ambiguous.
00032-18 | A. That's a, I don't know, I'm not sure
00032-19 | what the question is. But I, if are you saying
00032-20 | that --
00032-21 | MR. DAVIS: If you're not sure what
00032-22 | the question is, ask him to restate the question.
00032-23 | A. Yeah, would you ask me that again?
00032-24 | Q. The pH of a solution that nicotine
00032-25 | is exposed to, that will have an effect on the
----- PAGE00033 -----
00033-01 | amount of free nicotine available; is that
00033-02 | correct?
00033-03 | MR. KREINER: Same objections.
00033-04 | A. If the one has a solution of
00033-05 | nicotine and it is at a particular pH, then it is
00033-06 | believed that some of the nicotine is closely
00033-07 | associated with probably hydrogen ion and some of
00033-08 | it is not. And if you want to characterize the
00033-09 | stuff that isn't as, quote, "free nicotine,"
00033-10 | unquote, then if you add acid, which would make
00033-11 | the pH be low, you would increase the amount of
00033-12 | nicotine that is associated with these hydrogen
00033-13 | ions. So you would decrease the amount of, quote,
00033-14 | "free nicotine," unquote.
00033-15 | Q. So if you added a base such as
00033-16 | ammonia, that would increase the amount of free
00033-17 | nicotine in the solution; is that correct?
00033-18 | A. That's what the theory would tell
00033-19 | you would happen.

00033-20 Q. Did you ever hear of the G7 process?
00033-21 A. Yes.
00033-22 Q. Is the G7 process a process by which
00033-23 Reynolds would add ammonia to a solution and in
00033-24 fact increase the amount of free nicotine in that
00033-25 solution?

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00034-01 MR. KREINER: Objection, assumes
00034-02 facts not in evidence, lack of foundation, vague.
00034-03 A. Again, I'm not a tobacco processing
00034-04 expert. My understanding is the G7 process was --
00034-05 when you say G -- when you saw G7, it meant a --
00034-06 it was a blanket term for a host of processes that
00034-07 had to do with the production of reconstituted
00034-08 tobacco sheet.
00034-09 Q. And is one component of those
00034-10 processes the use of ammonia to increase the
00034-11 amount of free nicotine in a solution?
00034-12 MR. KREINER: Objection, assumes
00034-13 facts not in evidence, lack of foundation.
00034-14 A. It is my belief that in certain
00034-15 steps of the process, ammonia is used. I don't
00034-16 believe that it is used -- well. And part of the
00034-17 process has to do with extracting water solubles
00034-18 from the tobacco, nicotine being among these. And
00034-19 I think that ammonia was used in the process to
00034-20 aid in the extraction of the water-soluble
00034-21 materials from the tobacco raw material.
00034-22 Q. In the use of ammonia in that
00034-23 process, would that be consistent with the
00034-24 literature you were previously describing with
00034-25 respect to using ammonia to raise the pH of a

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00035-01 solution in order to increase the amount of free
00035-02 nicotine in that solution?
00035-03 MR. KREINER: Objection.
00035-04 MR. DAVIS: I'll object to that. I
00035-05 have no, I have no idea what your question is.
00035-06 MR. SAHAM: I can rephrase it if you
00035-07 can't understand it, Dr. Reynolds.
00035-08 MR. KREINER: I have other
00035-09 objections. Mischaracterized prior testimony,
00035-10 vague and ambiguous, compound.
00035-11 THE WITNESS: Now would you tell me
00035-12 what you asked me again? I'm sorry.
00035-13 BY MR. SAHAM:
00035-14 Q. Well, to aid me with my ignorance,
00035-15 adding ammonia -- ammonia is a base, correct?
00035-16 A. Right.
00035-17 Q. So adding ammonia to a solution will
00035-18 on an otherwise less-based solution will increase
00035-19 the pH of the solution; is that correct?
00035-20 A. Generally.
00035-21 Q. So therefore if ammonia was added to
00035-22 a water-soluble solution that contained nicotine,
00035-23 ammonia would increase the pH of that solution; is
00035-24 that correct?
00035-25 A. Ammonia, if you add enough ammonia,

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00036-01 eventually you'll start increasing the pH, right.
00036-02 Q. And it would be consistent then with
00036-03 the literature you previously described talking
00036-04 about the use of ammonia -- or strike that.

00036-05 | Also you testified earlier that
00036-06 | increasing the pH of the water soluble solution
00036-07 | that contained nicotine would increase the amount
00036-08 | of free nicotine in that solution; is that
00036-09 | correct?

00036-10 | MR. KREINER: Objection,
00036-11 | mischaracterizes testimony, asked and answered.

00036-12 | A. If you have a solution with a
00036-13 | nicotine salts in it, I believe that if you add
00036-14 | ammonia to those solutions you will shift the
00036-15 | equilibrium between the ammonia and hydrogen ions
00036-16 | towards having more ammonia that's not associated
00036-17 | with hydrogen ions, yes.

00036-18 | Q. And that, just to clarify the
00036-19 | record, ammonia not associated with hydrogen ions
00036-20 | is what is referred to as quote/unquote "free
00036-21 | nicotine"?

00036-22 | A. It is sometimes called that, yes.

00036-23 | Q. Do you know which products the G7
00036-24 | process was used in, to manufacture?

00036-25 | A. Not specifically. It was, it was a

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00037-01 | component of many products.

00037-02 | Q. That were marketed to the public?

00037-03 | A. Yes.

00037-04 | MR. KREINER: Doctor, I noticed you
00037-05 | looked at your watch, would you like to take a
00037-06 | break?

00037-07 | THE WITNESS: I'm fine.

00037-08 | MR. SAHAM: And any time you want to
00037-09 | take a break, Dr. Reynolds, just tell us --

00037-10 | THE WITNESS: Right.

00037-11 | MR. SAHAM: -- and we'll accommodate
00037-12 | you.

00037-13 | THE WITNESS: Actually, I'm waiting
00037-14 | for it to get a little warmer, it's kind of cool.

00037-15 | MR. KREINER: I'll work on the
00037-16 | temperature at the next break.

00037-17 | THE WITNESS: Okay.

00037-18 | MR. SAHAM: Could you please mark
00037-19 | this as Reynolds Exhibit 3.

00037-20 | (Deposition Exhibit No. 3 was
00037-21 | marked for identification and is
00037-22 | bound separately.)

00037-23 | Q. Dr. Reynolds, could you please take
00037-24 | a look at what we have marked as Exhibit 3.

00037-25 | And for the record, this is a RJR

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00038-01 | interoffice memorandum dated November 5, 1986. It
00038-02 | is to Ms. Carolyn R. Carpenter, and from
00038-03 | Ms. Rhenda Steele and Dr. Scott Appleton. And it
00038-04 | bears Bates number RJM071543 through 071544.

00038-05 | MR. KREINER: Counsel, do you know
00038-06 | if those RJR numbers, is that how the document was
00038-07 | produced to you?

00038-08 | MR. SAHAM: Yes. And again, with
00038-09 | the various Bates numbers on these documents, I
00038-10 | couldn't swear which litigation each Bates number
00038-11 | refers to.

00038-12 | MR. KREINER: The ones on the right
00038-13 | side I know are R.J. Reynolds; the ones on the
00038-14 | bottom I'm not familiar with.

00038-15 | MR. SAHAM: And also, I guess, just

00038-16| for the record, this document bears the second
00038-17| Bates number 51284 9187 through 88.
00038-18| (Witness peruses document.)
00038-19| BY MR. SAHAM:
00038-20| Q. Dr. Reynolds, do you recognize this
00038-21| document?
00038-22| A. I don't specifically remember this
00038-23| document but it has my -- it was obviously copied
00038-24| to me.
00038-25| Q. Do you have any reason to believe
----- PAGE00039 -----
00039-01| that you did not receive this in 1986 --
00039-02| A. No, I do not.
00039-03| Q. -- in the ordinary course of
00039-04| business?
00039-05| A. No, I do not have any reason to
00039-06| believe that.
00039-07| Q. The subject of this document is,
00039-08| "Pectin-Release Cast Sheet." What is a
00039-09| pectin-release cast sheet, if you know,
00039-10| Dr. Reynolds?
00039-11| A. Again, I'll tell you that I'm, not,
00039-12| I'm not an expert tobacco processor and sheet
00039-13| materials are not my specialty.
00039-14| "Sheet" in this case I believe is
00039-15| referring to reconstituting tobacco sheet.
00039-16| Q. Similar to what we were discussing
00039-17| earlier?
00039-18| A. Somewhat. "Cast sheet" I believe is
00039-19| a sheet that was made by an experimental process
00039-20| that was different from the normal G7 process.
00039-21| Q. So the G7 process was the process
00039-22| that was being used in manufacture but the cast
00039-23| sheet was an experimental process which was looked
00039-24| into?
00039-25| A. I believe that's true.
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00040-01| Q. And how does the cast sheet differ
00040-02| from the reconstituted G7 sheet?
00040-03| A. It's a difference in the actual --
00040-04| let me begin, let me start that over again.
00040-05| The G7 process is somewhat like
00040-06| making paper. And there are differences in the
00040-07| specifics of the machinery and what all that goes
00040-08| into making the G7 type sheet than the cast sheet.
00040-09| And you have just reached the limit
00040-10| of my knowledge of what the differences are.
00040-11| They, it was, the products ended up being
00040-12| physically different somehow. One was more papery
00040-13| and one was less papery.
00040-14| Q. Did you know if the cast sheet was
00040-15| ever used in the manufacturing process at
00040-16| Reynolds?
00040-17| A. For commercial cigarettes?
00040-18| Q. For commercial cigarettes.
00040-19| A. I do not know.
00040-20| Q. And what does pectin release refer
00040-21| to. Is pectin a chemical or element? What is
00040-22| pectin?
00040-23| A. I'll have to again disclaim expert
00040-24| knowledge of the structure of tobacco. Pectin is
00040-25| a complicated compound or group of compounds that
----- PAGE00041 -----

00041-01 | is part of a cell wall of plants, and it has to do
00041-02 | with the structural integrity of the plant.

00041-03 | My belief is in this particular
00041-04 | process they wanted to disrupt this association of
00041-05 | the pectin with, with basically a cell so they
00041-06 | could make the -- it would make it easier to make
00041-07 | this sheet.

00041-08 | Q. Are you familiar with the compound
00041-09 | diammonium phosphate?

00041-10 | A. Yes.

00041-11 | Q. And was it your understanding that
00041-12 | diammonium phosphate was being used in this
00041-13 | pectin-release cast sheet process?

00041-14 | MR. KREINER: Objection, assumes
00041-15 | facts not in evidence.

00041-16 | A. Well, on the face of it from looking
00041-17 | at the document, it says that they were applying
00041-18 | it to the -- in this particular material.

00041-19 | Q. Is diammonium phosphate, is that a
00041-20 | base chemical?

00041-21 | A. It is a salt of ammonia and
00041-22 | phosphoric acid.

00041-23 | Q. And does that have a base pH?

00041-24 | A. I don't know.

00041-25 | Q. Do you recall, other than from this

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00042-01 | document, the use of diammonium phosphate in any
00042-02 | reconstitution or reconstituted sheet process
00042-03 | either experimental or commercialized at Reynolds?

00042-04 | MR. KREINER: Objection, overbroad.

00042-05 | A. There was a lot of work that I knew
00042-06 | about, that I was -- there was a lot of work going
00042-07 | on to investigate the use of DAP, diammonium
00042-08 | phosphate.

00042-09 | Q. Do you know if diammonium phosphate
00042-10 | was ever used in the commercial manufacturing
00042-11 | process?

00042-12 | MR. KREINER: Objection, vague.

00042-13 | A. No, I don't.

00042-14 | Q. Now I want to draw your attention to
00042-15 | the third paragraph of this document, under
00042-16 | "Background." Paragraph number three under
00042-17 | "Background," where the authors Ms. Steele and Dr.
00042-18 | Appleton state, "Condensate from cigarettes to
00042-19 | which 1.9% DAP had been added did not promote
00042-20 | tumor activity in DMBA-initiated dorsal mouse
00042-21 | skin. No significant differences were observed in
00042-22 | skin tumor incidence in mice administered
00042-23 | condensates from reconstituted tobacco treated
00042-24 | with 2% DAP versus untreated reconstituted tobacco
00042-25 | in two studies."

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00043-01 | Now they seem to say that there is
00043-02 | no significant difference in the skin tumor
00043-03 | incidence between the 2% -- in mice treated with
00043-04 | the 2% DAP reconstituted tobacco or untreated
00043-05 | reconstituted tobacco. Are you aware whether
00043-06 | there was any tumor incidence at all in either of
00043-07 | these two categories referred to in this document?

00043-08 | MR. DAVIS: Objection.

00043-09 | MR. KREINER: Objection, vague and
00043-10 | ambiguous, compound, mischaracterizes the
00043-11 | document, lack of foundation within this witness's

00043-12| expertise and knowledge.
00043-13| MR. SAHAM: And again, I mean, I
00043-14| have been allowing it but I believe the local rule
00043-15| in the Northern District the appropriate objection
00043-16| is an objection to form.
00043-17| MR. KREINER: Without the grounds?
00043-18| MR. SAHAM: Without the grounds.
00043-19| Strike grounds, "vague," I think that's okay. But
00043-20| if we're going to go into a lengthy speaking
00043-21| objection -- and up until now I don't think you
00043-22| have done that, but I would appreciate it if you
00043-23| would limit the objection pursuant to the local
00043-24| rule.
00043-25| BY MR. SAHAM:

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00044-01| Q. That aside, Dr. Reynolds, would you
00044-02| like me to repeat question or did you understand
00044-03| it?
00044-04| A. I'm sorry, I want you to repeat the
00044-05| question.
00044-06| Q. Okay. Well, after reading the third
00044-07| paragraph which I just read from this document,
00044-08| are you aware when the authors, Dr. Appleton and
00044-09| Ms. Steele, are referring to no difference between
00044-10| the skin tumor incidence between the two groups of
00044-11| mice, one treated with the 2% DAP reconstituted
00044-12| tobacco and the other group treated with untreated
00044-13| reconstituted tobacco -- and when I say "treated,"
00044-14| I'm assuming there was a skin, skin painting
00044-15| procedure.
00044-16| To your knowledge, does that no
00044-17| difference, does that mean that there was some
00044-18| incidence in both groups?
00044-19| MR. DAVIS: Objection.
00044-20| MR. KREINER: Objection to the form,
00044-21| speculation.
00044-22| A. If I understand question.
00044-23| MR. DAVIS: If you don't understand
00044-24| the question, ask him to, I had trouble with it, I
00044-25| would like for you to rephrase it if you don't

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00045-01| mind.
00045-02| MR. SAHAM: I guess, Dr. Reynolds,
00045-03| can you not understand that question? Glad to
00045-04| repeat it if it is confusing.
00045-05| MR. DAVIS: Objection. Go ahead.
00045-06| A. As I understand your question, it
00045-07| is, was there any skin tumor incidence when these
00045-08| materials were applied to the mice?
00045-09| Q. Correct.
00045-10| A. And in this case, I don't know, in
00045-11| this particular experiment, I do not know whether
00045-12| there was any or not.
00045-13| Q. Do you recall any similar
00045-14| experiments comparing a DAP-constituted tobacco or
00045-15| reconstituted tobacco and an untreated
00045-16| reconstituted tobacco using mice skin painting?
00045-17| MR. KREINER: Objection to the form,
00045-18| vague.
00045-19| A. No. I mean, that was not, I didn't
00045-20| do mice skin painting so I don't know whether
00045-21| there were other experiments done with -- I cannot
00045-22| recall whether there were other experiments done

|00045-23| with DAP or not.
|00045-24| Q. As we sit here today, do you recall
|00045-25| being informed of any particular mice skin

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|00046-01| painting experiments during your tenure at
|00046-02| Reynolds?
|00046-03| A. There was literature about mice skin
|00046-04| painting studies; and I can't cite you a specific
|00046-05| example, but I'm certain that I would have seen
|00046-06| similar kinds of pieces of information as what is
|00046-07| in this document.
|00046-08| Q. Anything that you recall relating to
|00046-09| any sort of DAP formulation?
|00046-10| A. Not specifically.
|00046-11| Q. When you say, "not specifically,"
|00046-12| anything generally?
|00046-13| A. As I mentioned to you, DAP was
|00046-14| investigated by the product development people.
|00046-15| And these kinds of documents, if they were going
|00046-16| to run -- if they were going to bring materials
|00046-17| forward to the human research -- to the RJRT Human
|00046-18| Research Review Committee, they would have had
|00046-19| this kind of background. I cannot -- I can't tell
|00046-20| you that I specifically recall instances but there
|00046-21| probably were.
|00046-22| Q. And you were chairman of the Human
|00046-23| Research Review Committee for a time; is that
|00046-24| correct?
|00046-25| A. For a time, yes.

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|00047-01| Q. What time period?
|00047-02| A. To the best of my recollection, it
|00047-03| was from the, when the committee was actually
|00047-04| formed -- and I, I am going to say 1976 but I
|00047-05| can't tell you that's exactly true because I don't
|00047-06| remember the exact date -- until either the late
|00047-07| '80s or early '90s.
|00047-08| Q. And what was the purpose of this
|00047-09| committee?
|00047-10| A. The, whenever a, an evaluation of a
|00047-11| study or an evaluation of a product was going to
|00047-12| be carried out or whenever any study that was
|00047-13| going to be carried out involved the participation
|00047-14| of people, the study plan had to come through the
|00047-15| HRRC, the Human Research Review Committee.
|00047-16| Q. So whenever a study was going to use
|00047-17| human subjects it needed to go to the Human --
|00047-18| A. Right, yes.
|00047-19| Q. -- Research Review Committee?
|00047-20| A. That's correct.
|00047-21| Q. Do you recall during your tenure as
|00047-22| chairman of the committee and in your tenure
|00047-23| generally at Reynolds any mouse skin painting
|00047-24| studies brought to your attention that
|00047-25| specifically related to reconstituted tobacco?

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|00048-01| MR. KREINER: Objection to the form.
|00048-02| A. Well, certainly this one here had to
|00048-03| do with it; and as I said, there were probably
|00048-04| many tests involving different kinds of sheet that
|00048-05| could have come through the committee.
|00048-06| Q. Do you recall any mouse painting
|00048-07| experiments comparing recon- -- mice treated withy

00048-08 | constituted tobacco and mice, a control group of
00048-09 | mice not treated at all?
00048-10 | MR. KREINER: Objection to the form.
00048-11 | A. Not specifically, I don't recall
00048-12 | that.
00048-13 | Q. Is it your general recollection that
00048-14 | skin, skin painting experiments conducted
00048-15 | demonstrated some incidence of skin tumors in
00048-16 | mice?
00048-17 | MR. KREINER: Objection to the form.
00048-18 | A. Skin painting studies?
00048-19 | Q. Utilizing tobacco.
00048-20 | A. Utilizing tobacco in any form, or?
00048-21 | Q. Cigarette smoke tobacco residue --
00048-22 | let me strike that, that's a bad question I'll
00048-23 | admit for the record.
00048-24 | MR. KREINER: Stipulate to that.
00048-25 | Q. In your tenure on the Human Research
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00049-01 | Review Committee, you have testified that there
00049-02 | were occasion when mice skin painting experiments
00049-03 | were brought to your attention; is that correct?
00049-04 | MR. KREINER: Objection to the form.
00049-05 | A. I believe I testified that these
00049-06 | kinds of documents similar to the exhibits that
00049-07 | you have showed me came to the committee
00049-08 | frequently; and that this kind of information
00049-09 | would normally be in the document; and that I
00049-10 | believe there would have been reference to mice
00049-11 | skin painting experiments in those documents.
00049-12 | Q. And the mice skin painting
00049-13 | experiments, some of those included use of some
00049-14 | sort of cigarette smoke that was reduced into a
00049-15 | form where it could be painted on the mice's skin;
00049-16 | is that correct?
00049-17 | MR. KREINER: Objection to the form.
00049-18 | A. That's, I believe that to be true
00049-19 | yes.
00049-20 | Q. Is there a word or description that
00049-21 | you would use for the chemical or, or paint that
00049-22 | was used to put on the mice's skin?
00049-23 | A. It would normally be called
00049-24 | cigarette smoke condensate.
00049-25 | Q. Cigarette smoke condensate. And was
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00050-01 | it your -- is it your recollection that mice
00050-02 | treated with cigarette condensate or painted with
00050-03 | cigarette condensate had a higher skin tumor
00050-04 | incidence than mice that were not treated with
00050-05 | that condensate?
00050-06 | MR. KREINER: Objection to the form.
00050-07 | A. I believe that's true.
00050-08 | Q. So in this document, the third
00050-09 | paragraph in the "Background" where the authors
00050-10 | state, "No significant differences were observed
00050-11 | in skin tumor incidence in mice administered
00050-12 | condensates from reconstituted tobacco treated
00050-13 | with 2% DAP versus untreated reconstituted tobacco
00050-14 | in two studies," is it correct that both of those
00050-15 | groups exhibited a higher incidence of skin tumor
00050-16 | than a control group?
00050-17 | MR. DAVIS: Objection.
00050-18 | MR. KREINER: Objection to the form.

00050-19| MR. DAVIS: Objection. Go ahead.
00050-20| A. In this particular experiment these
00050-21| people are referencing, I don't know what the
00050-22| incidence of skin tumors was and whether or not it
00050-23| was different than untreated mice.
00050-24| MR. DAVIS: Scott, do you mind if we
00050-25| take a quick break?

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00051-01| MR. SAHAM: No, no, this is a good
00051-02| time.
00051-03| THE VIDEOGRAPHER: Off the record at
00051-04| 10:10.
00051-05| (Brief recess.)
00051-06| THE VIDEOGRAPHER: Back on the
00051-07| record at 10:22.
00051-08| BY MR. SAHAM:
00051-09| Q. Dr. Reynolds, if we could just look
00051-10| back at Exhibit 3 at one further question. On the
00051-11| last page, the last sentence of the
00051-12| second-to-the-last paragraph, "Based on this small
00051-13| increase in HCN and the results of the inhalation
00051-14| acute toxicity study, it is unlikely that the use
00051-15| of DAP in pectin release cast sheet would pose an
00051-16| acute toxicity health hazard."
00051-17| Do you agree with that statement?
00051-18| MR. KREINER: Objection to form, and
00051-19| foundation.
00051-20| A. (Witness peruses document.)
00051-21| Well, I'm not a toxicologist. And
00051-22| that is the statement of Ms. Steele and
00051-23| Dr. Appleton, who were or are toxicologists, so it
00051-24| is their opinion that it, what it says in the
00051-25| sentence there.

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00052-01| Q. Sir, in your position as chairman of
00052-02| the Human Research Review Committee, generally
00052-03| with respect to a toxicology issue you would defer
00052-04| to a toxicologist's statement on an issue; is that
00052-05| correct?
00052-06| A. Generally speaking it would be what
00052-07| I would do.
00052-08| MR. SAHAM: Could we mark this as
00052-09| Exhibit 4, please.
00052-10| (Deposition Exhibit No. 4 was
00052-11| marked for identification and is
00052-12| bound separately.)
00052-13| (Witness peruses document.)
00052-14| BY MR. SAHAM:
00052-15| Q. For the record, Exhibit 4 is a R&D
00052-16| project outline, "Project: Nicotine Receptor
00052-17| Pharmacology." And this document is dated
00052-18| 5/11/83; the author is J.H. Reynolds, and the
00052-19| outside Bates number range is 50604 7625 through
00052-20| 50604 7626.
00052-21| Dr. Reynolds, would you please take
00052-22| a look at this document.
00052-23| A. (Witness peruses document.)
00052-24| MR. KREINER: Just for the record, I
00052-25| object to the characterization of what the

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00053-01| document is, it speaks for itself.
00053-02| Q. Dr. Reynolds, do you recognize this
00053-03| document?

00053-04| A. Yes.
00053-05| Q. What is this document?
00053-06| A. The R&D Department required that
00053-07| every ongoing project have a description of some
00053-08| kind. And during a certain period of time this
00053-09| was the form of that product description -- I
00053-10| mean, product -- project description that was
00053-11| required.
00053-12| Q. And that's for the nicotine receptor
00053-13| pharmacology project?
00053-14| A. That's correct.
00053-15| Q. Briefly, what was that project?
00053-16| A. It was a project to, as this
00053-17| document states, to understand the properties of
00053-18| nicotine as observed in animal cells.
00053-19| Q. And would you agree that nicotine
00053-20| interacts with the central nervous system of
00053-21| animal cells?
00053-22| A. Yes.
00053-23| MR. KREINER: Objection to the form.
00053-24| A. Sorry. Yes.
00053-25| Q. Would you agree with that statement

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00054-01| that nicotine interacts with the central nervous
00054-02| system of a human being?
00054-03| MR. KREINER: Objection to the form,
00054-04| foundation.
00054-05| A. That's what is believed.
00054-06| Q. Do you believe that?
00054-07| A. Yes.
00054-08| Q. And that, as part of that
00054-09| interaction, does nicotine bond with certain
00054-10| receptors in the nervous system?
00054-11| MR. KREINER: Objection to the form.
00054-12| A. My, my, I'm not a pharmacologist or
00054-13| physiologist, but that's what I believe is true.
00054-14| Q. Is this process or does this process
00054-15| where nicotine bonds with certain receptors in the
00054-16| central nervous system, does this process have a
00054-17| physiological effect?
00054-18| MR. KREINER: Objection to the form.
00054-19| A. I think that it does.
00054-20| Q. And how would you describe that
00054-21| physiological effect?
00054-22| A. It is known that some of the
00054-23| physiological effects are a slight increase in the
00054-24| rate of the beating of the heart, a slight
00054-25| increase in blood pressure, a slight decrease in

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00055-01| the temperature of the skin.
00055-02| Q. Do you believe that this
00055-03| physiological effect is one of the reasons for
00055-04| smoking?
00055-05| MR. KREINER: Objection to the form.
00055-06| A. Do I? Would you say that again,
00055-07| please.
00055-08| MR. SAHAM: Could you read back the
00055-09| question please.
00055-10| (The reporter read back the pending
00055-11| question.)
00055-12| A. It might be.
00055-13| Q. Now in this document, under the
00055-14| "Goals" section?

00055-15| A. Right.
00055-16| Q. The third one down, "Commercial,"
00055-17| the goal is stated as, "Arrest the declining
00055-18| social acceptability of smoking"?
00055-19| A. Correct.
00055-20| Q. And then it says in parentheses,
00055-21| "(RJRT Key Issue 5)." Was the commercial goal of
00055-22| this research to arrest the declining social
00055-23| acceptability of smoking?
00055-24| MR. KREINER: Objection to the form.
00055-25| A. The company would every year put out
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00056-01| a list of key issues and they wanted you to put
00056-02| everything that you did under one of these key
00056-03| issues. And as I recall, this was the one that we
00056-04| could most nearly put this piece of research
00056-05| under.
00056-06| Q. So one of the key issues expressed
00056-07| by the company or communicated to you by the
00056-08| company to categorize R&D projects under was to
00056-09| arrest the declining social acceptability of
00056-10| smoking?
00056-11| MR. KREINER: Objection to the form.
00056-12| Q. Is that correct?
00056-13| A. The key issues weren't specific to
00056-14| R&D, they were company-wide. So they had a list
00056-15| of key issues, and it says here that number five
00056-16| was arresting the declining social acceptability
00056-17| of smoking.
00056-18| Q. And you were the author of this
00056-19| document; is that correct?
00056-20| A. Yes.
00056-21| Q. And in describing commercial goals,
00056-22| you chose the goal from the list presumably
00056-23| disseminated by the company as to, "Arrest the
00056-24| declining social acceptability of smoking"; is
00056-25| that correct?
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00057-01| MR. KREINER: Objection to the form.
00057-02| A. I'm not sure whether I specifically
00057-03| chose it or not, or whether it was discussed with
00057-04| the individual who was responsible for the project
00057-05| and/or my superiors.
00057-06| Q. But in discussions with those
00057-07| individuals -- either the individual specifically
00057-08| responsible for the project or your superiors --
00057-09| it was decided that the most appropriate goal to
00057-10| categorize this research under was to arrest the
00057-11| declining social acceptability of smoking; is that
00057-12| correct?
00057-13| MR. KREINER: Objection to the form.
00057-14| A. From among the list we had presented
00057-15| to us, this was the one we could most nearly
00057-16| shoehorn it into.
00057-17| Q. Were there other research projects
00057-18| you recall that were also categorized under this
00057-19| goal as to arrest the declining social
00057-20| acceptability of smoking?
00057-21| A. I don't specifically recall, but
00057-22| there may have been.
00057-23| Q. So it was common practice to assign
00057-24| commercial goals to specific research and
00057-25| development projects?

00058-01 MR. KREINER: Objection to the form.
00058-02 A. It was common practice to, to, to
00058-03 take the R&D projects, at least, and I'm presume
00058-04 all other projects that would come in, and put
00058-05 them within these categories that were assigned by
00058-06 the company.
00058-07 Q. Is it your understanding that the
00058-08 overall goal or one of the overall goals of
00058-09 Reynolds was to improve its position in the
00058-10 cigarette marketplace?
00058-11 MR. KREINER: Objection to the form.
00058-12 A. Versus our competitors, yes.
00058-13 Q. Was that ever a goal that was
00058-14 expressed to you in your capacity in the Research
00058-15 and Development Department?
00058-16 A. It was a common thread, I mean, of,
00058-17 that was, that's what commercial companies do.
00058-18 Q. Do you think that goal was
00058-19 ultimately related to all the research you did in
00058-20 your tenure at Reynolds?
00058-21 MR. KREINER: Objection to the form.
00058-22 A. Some of the research we did was more
00058-23 or less basic science research, fundamental
00058-24 research; and sometimes it is kind of difficult to
00058-25 directly relate what you are doing in a

00059-01 fundamental scientific research program to a
00059-02 commercial goal.
00059-03 Q. But generally, I guess all of your
00059-04 applied science and in some respect basic science
00059-05 was generally tailored to improve Reynolds'
00059-06 position in the cigarette marketplace?
00059-07 MR. DAVIS: Objection to that.
00059-08 MR. KREINER: Objection to the form.
00059-09 A. Not all the basic science that we
00059-10 did was directed specifically toward improving
00059-11 R.J. Reynolds' performance in the marketplace.
00059-12 Q. What about with respect to the
00059-13 applied science, was all the applied science you
00059-14 were involved with directed to improve Reynolds'
00059-15 position in the cigarette marketplace?
00059-16 MR. DAVIS: Objection.
00059-17 MR. KREINER: Objection to the form.
00059-18 A. In the long run I would say our
00059-19 applied science was directed to improving our
00059-20 position in the marketplace.
00059-21 Q. And when we are talking about
00059-22 improving Reynolds' position in the marketplace,
00059-23 we're talking about increasing the sale of --
00059-24 sales of the company's product; is that correct?
00059-25 MR. KREINER: Objection to the form.

00060-01 A. It could be in terms, it could be
00060-02 improving the sales. It could be taking market
00060-03 share, regaining market share or improving market
00060-04 share versus some other entity. It could be in
00060-05 terms of improving the product's perception by the
00060-06 consumers.
00060-07 It could be a number of things that
00060-08 didn't necessarily directly relate to sales.
00060-09 Q. Is it your understanding that free
00060-10 nicotine more readily binds to receptors in the

00060-11 | central nervous system than non-free nicotine?
00060-12 | A. No.
00060-13 | MR. KREINER: Objection to the form.
00060-14 | Q. Is it your understanding that the
00060-15 | opposite is true?
00060-16 | A. No.
00060-17 | Q. Do you have, is it your
00060-18 | understanding that there is no difference in the
00060-19 | ease of bonding between those two types of
00060-20 | nicotines --
00060-21 | MR. KREINER: Objection to the form.
00060-22 | A. I -- excuse me. I don't know what
00060-23 | the form of nicotine is when it arrives at a
00060-24 | receptor. It is going to be influenced by the
00060-25 | biochemistry of the situation there.

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00061-01 | Q. Is that an area that you have done
00061-02 | any research on?
00061-03 | A. I personally have not.
00061-04 | Q. Anyone you supervised do any
00061-05 | research on that area?
00061-06 | A. I don't recall we had research
00061-07 | specifically directed at that.
00061-08 | Q. Do you recall anyone discussing
00061-09 | research on that issue during your tenure at
00061-10 | Reynolds?
00061-11 | A. We could have, I don't recall.
00061-12 | Q. So basically if I made the statement
00061-13 | that free nicotine bonds or binds to the receptors
00061-14 | described in Exhibit 4, you are not aware of any
00061-15 | research one way or another that would bear on the
00061-16 | accuracy of that statement?
00061-17 | MR. DAVIS: Objection.
00061-18 | MR. KREINER: Objection to the form.
00061-19 | A. No.
00061-20 | Q. You're not aware of any such?
00061-21 | A. I don't recall any.
00061-22 | MR. SAHAM: Could we mark this as
00061-23 | Exhibit 5, please.
00061-24 | (Deposition Exhibit No. 5 was
00061-25 | marked for identification and is

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00062-01 | bound separately.)
00062-02 | MR. SAHAM: And for the record,
00062-03 | Exhibit 5 is an interoffice memorandum to Mr. G.
00062-04 | H. Long from J. H. Reynolds dated December 17,
00062-05 | 1982, and it bears the side Bates numbers 50298
00062-06 | 3100 through 3101.
00062-07 | BY MR. SAHAM:
00062-08 | Q. Could you please take a look at this
00062-09 | document, Dr. Reynolds.
00062-10 | MR. KREINER: For the record, again
00062-11 | just objection to what the document is.
00062-12 | A. (Witness peruses document.)
00062-13 | Q. Dr. Reynolds, have you had a chance
00062-14 | to look at this document?
00062-15 | A. Yes, I have.
00062-16 | Q. Do you recognize it?
00062-17 | A. Yes, I do.
00062-18 | Q. What is this document?
00062-19 | A. This is a interoffice memorandum to
00062-20 | Mr. G. H. Long from me, I believe in reference to
00062-21 | a query owing -- that came from his reading of a

00062-22| weekly highlight report that had been, that he had
00062-23| read.
00062-24| Q. And is that your signature at the
00062-25| bottom of the second page?

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00063-01| A. Yes, it is.
00063-02| Q. And was this drafted in the regular
00063-03| course of business in December of 1982?
00063-04| A. Yes, it was.
00063-05| Q. I would like to call your attention
00063-06| to the second sentence of the first paragraph
00063-07| where you state, "Briefly, this work is designed
00063-08| to study the uptake and the metabolism of nicotine
00063-09| by human smokers, and the effects that nicotine
00063-10| has on the amounts of certain hormones and
00063-11| neurotransmitters that are naturally in the
00063-12| blood."
00063-13| Is it your understanding that the
00063-14| uptake and metabolism of nicotine is an important
00063-15| element of smoking?
00063-16| MR. KREINER: Objection to the form.
00063-17| A. Certainly when people smoke
00063-18| cigarettes they do uptake nicotine and it is
00063-19| metabolized.
00063-20| Q. And this, this research, would you
00063-21| consider this applied research or basic research?
00063-22| MR. KREINER: Objection to the form.
00063-23| A. I would say this is more nearly
00063-24| basic research.
00063-25| Q. And was this basic research related

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00064-01| to, related in any way to Reynolds' ultimate goal
00064-02| of enhancing their position in the cigarette
00064-03| marketplace?
00064-04| MR. KREINER: Objection to form.
00064-05| A. To the extent that it, as it says in
00064-06| the second paragraph, in terms of our being able
00064-07| to understand our product, I suppose it would have
00064-08| been.
00064-09| Q. And you are talking about the first
00064-10| sentence of the second paragraph where you state,
00064-11| "The relevance of this work to the interests of
00064-12| RJR is based on two principles; we must know our
00064-13| products -- product and we must know our
00064-14| customers."
00064-15| A. Right.
00064-16| Q. And then you go on, "Nicotine is
00064-17| regarded as a key ingredient of our products and
00064-18| one that is important to our customers."
00064-19| Did you believe that second
00064-20| statement, that, "Nicotine is regarded as a key
00064-21| ingredient of our products and one that is
00064-22| important to our customers," did you believe that
00064-23| that statement was true when you wrote it in
00064-24| December of 1982?
00064-25| A. Yes.

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00065-01| Q. Do you believe that statement to be
00065-02| true today?
00065-03| A. Yes.
00065-04| Q. Is nicotine an important reason as
00065-05| to why people smoke?
00065-06| MR. KREINER: Objection to form.

00065-07| A. It is one reason, I believe.
00065-08| Q. Would you categorize it as an
00065-09| important reason?
00065-10| MR. KREINER: Objection to the form.
00065-11| A. I believe that it is.
00065-12| Q. Are you aware of research where
00065-13| animals will self-administer nicotine as opposed
00065-14| to food?
00065-15| MR. DAVIS: Objection.
00065-16| MR. KREINER: Objection to the form.
00065-17| A. I'm aware where the
00065-18| self-administration of nicotine has been studied.
00065-19| I don't recall whether it had to do with food or
00065-20| something else.
00065-21| Q. Is it your understanding that
00065-22| animals have been shown in experiments to
00065-23| self-administer nicotine?
00065-24| MR. DAVIS: Objection.
00065-25| MR. KREINER: Objection to the form.

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00066-01| A. I would -- that's not my field, I'm
00066-02| not a behavioral scientist, I'm not a physiologist
00066-03| or a toxicologist. My understanding is that there
00066-04| have been, there are research reports that show
00066-05| that animals under certain conditions can
00066-06| self-administer nicotine.
00066-07| Q. Now you have stated in the past that
00066-08| nicotine under circumstances can be considered --
00066-09| or strike that.
00066-10| You have stated in the past that
00066-11| nicotine under certain circumstances can be
00066-12| considered a drug; is that correct?
00066-13| MR. KREINER: Objection to form.
00066-14| A. Yes, it is true.
00066-15| Q. Is it your understanding that
00066-16| nicotine can be habit-forming?
00066-17| MR. KREINER: Objection to the form,
00066-18| foundation.
00066-19| A. I don't know that nicotine in and of
00066-20| itself is habit-forming.
00066-21| Q. Nicotine as a component of cigarette
00066-22| smoke, do you feel that could be --
00066-23| A. Cigarettes --
00066-24| Q. Habit-forming --
00066-25| A. I'm sorry.

----- PAGE00067 -----

00067-01| Q. Do you feel that could be habit
00067-02| forming?
00067-03| A. Sorry. Cigarettes are a habitual
00067-04| behavior of smokers. Smoking cigarettes is a
00067-05| habitual behavior of smokers.
00067-06| Q. And do you feel that nicotine is a
00067-07| component of that habitation?
00067-08| A. It might be.
00067-09| MR. KREINER: Objection to the form.
00067-10| Q. Do you think it's accurate to state
00067-11| that some smokers crave nicotine?
00067-12| MR. KREINER: Objection to the form.
00067-13| A. I don't know that they specifically
00067-14| crave nicotine. They certainly want to smoke
00067-15| cigarettes.
00067-16| Q. And do you think nicotine is a
00067-17| component of this want?

00067-18| A. It might be.
00067-19| Q. I would like to turn your attention
00067-20| to the second page of Exhibit 5. Do you know what
00067-21| has been removed from this document in the
00067-22| redaction process?
00067-23| MR. KREINER: At this point I would
00067-24| just like to lodge an objection to privilege.
00067-25| Reynolds is continuing to maintain privilege on

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00068-01| this. This is one of the documents that is a part
00068-02| of the published documents. I know there has been
00068-03| a court order allowing inquiries into this area
00068-04| and at this point I will instruct the witness to
00068-05| answer the question, I just want to get the
00068-06| objection on the record.

00068-07| MR. SAHAM: Okay. And I guess I
00068-08| would request, too, that given the Court's ruling
00068-09| that we be provided an unredacted version of this
00068-10| document, given that the Court's order has allowed
00068-11| discussion of these documents at deposition, it
00068-12| has reserved, is going to, the Court has stated it
00068-13| is going to make a ruling on these privilege
00068-14| objections at a later date.

00068-15| BY MR. SAHAM:

00068-16| Q. But, Dr. Reynolds, do you know what
00068-17| lab redacted on Page 2 from this document?

00068-18| A. No.

00068-19| Q. Do you have any general recollection
00068-20| of what appeared in the first paragraph of the
00068-21| second page and the second paragraph of the second
00068-22| page?

00068-23| MR. KREINER: Objection to the form.

00068-24| A. No.

00068-25| MR. SAHAM: I guess, counsel, I

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00069-01| guess that's a request. I mean, is that something
00069-02| you think we're going to be able to get a copy?

00069-03| MR. KREINER: I'm not involved with
00069-04| that, I'll relay the request to the appropriate
00069-05| people who are dealing with those issues.

00069-06| MR. SAHAM: I appreciate that.

00069-07| MR. KREINER: Sure.

00069-08| MR. SAHAM: Could you please mark
00069-09| this as Exhibit 6.

00069-10| (Deposition Exhibit No. 6 was
00069-11| marked for identification and is
00069-12| bound separately.)

00069-13| BY MR. SAHAM:

00069-14| Q. Dr. Reynolds, if you would please
00069-15| take a look at what has been marked as Exhibit 6.
00069-16| This document, for the record, is an RJR
00069-17| interoffice memorandum to John E. Stewart from
00069-18| Rhenda H. Steele dated August 23, 1991. It bears
00069-19| the RJR side Bates stamp 50988 7060 through 7061;
00069-20| but then it picks up again at another document
00069-21| that's attached, 50988 7084, 7 -- well, in fact,
00069-22| this is confusing.

00069-23| There are several documents attached
00069-24| and this is the manner in which this document was
00069-25| produced. The first two pages are the document I

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00070-01| just described. Then it picks up with another
00070-02| interoffice memorandum from Rhenda H. Steele to

00070-03| Barry S. Fagg dated June 14, 1991; then another
00070-04| RJRT interoffice memorandum to Thomas A. Perfetti
00070-05| from Rhenda H. Steele dated February 22, 1990.
00070-06| Yet another RJR interoffice memorandum dated
00070-07| December 11, 1989, from Rhenda L. Steele to Barry
00070-08| S. Fagg. Yet another memorandum from Barry Smith
00070-09| Fagg dated April 1, 1992. And then finally an
00070-10| Analytical Services Division interoffice
00070-11| memorandum from Bert M. Gordon to Dr. D. C. Rees
00070-12| dated May 9, 1991.

00070-13| So I guess that some warning is
00070-14| required here that these documents are -- someone
00070-15| deemed them interrelated but they are separate,
00070-16| separate memorandum and they are all now
00070-17| cumulatively being referred to as Exhibit 6.

00070-18| If you could continue to look
00070-19| through them.

00070-20| MR. KREINER: Counsel, for the
00070-21| record I have another page attached to the copy
00070-22| you gave me. I think you referenced analytical
00070-23| service memo from Bert Gordon to D. C. Rees as the
00070-24| last in yours. I have another page, is that on
00070-25| yours? Bates number which is 50991 6503.

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00071-01| MR. SAHAM: Right. I guess that is
00071-02| an unrelated document, I was thinking that was
00071-03| part of it. But yes, that is correct.

00071-04| MR. KREINER: Also for the record I
00071-05| notice there are these RJM Bates Nos. which do
00071-06| appear to be consecutive. Again, I don't know
00071-07| that you know the source of those, but that
00071-08| appears to be why they have been collected. I
00071-09| don't believe Reynolds produced them this way.

00071-10| MR. SAHAM: I guess I would differ
00071-11| with that interpretation. In one of the
00071-12| litigations they were produced and Bates stamped
00071-13| in this order, although I couldn't speak with
00071-14| certainty where that Bates number came from.

00071-15| (Witness peruses document.)

00071-16| BY MR. SAHAM:

00071-17| Q. Have you had a chance to look
00071-18| through this document --

00071-19| A. Yes.

00071-20| Q. -- or series of documents,
00071-21| Dr. Reynolds? Did you recognize any of these
00071-22| documents -- or I guess strike that.

00071-23| The first two pages, the memorandum
00071-24| from Rhenda Steele to John E. Stewart, do you
00071-25| recognize that portion of Exhibit 6?

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00072-01| A. I don't recall having seen it
00072-02| before. I'm on the cc list --

00072-03| Q. Do you have any --

00072-04| A. -- so I don't, I presume I actually
00072-05| got it.

00072-06| Q. And you have no reason to believe
00072-07| that you didn't receive this in the regular course
00072-08| of business?

00072-09| A. That's correct.

00072-10| Q. And this document describes the REST
00072-11| process. Is this a reconstitution process as we
00072-12| have spoken about it earlier?

00072-13| MR. KREINER: Objection to the form.

00072-14| A. No. It is not.
00072-15| Q. Could you describe the REST process
00072-16| generally?
00072-17| MR. KREINER: Objection to the form,
00072-18| foundation.
00072-19| A. The, this was a, this was a
00072-20| experimental process that was looked at in the
00072-21| process technology and development area of R&D.
00072-22| That was not my area so I'm not intimately
00072-23| familiar with it. However, my understanding was
00072-24| it was exactly what it says, REST meant -- in
00072-25| fact, I can't remember what the acronym REST stood

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00073-01| for. It was the process of extracting tobacco and
00073-02| doing something to the extract and then adding it
00073-03| back to the tobacco.
00073-04| Q. This is, it is referred to as a
00073-05| controlled nicotine process?
00073-06| MR. KREINER: Objection to the form.
00073-07| A. This, the subject of this memorandum
00073-08| says that, "Controlled nicotine process using
00073-09| pentane as nicotine solvent."
00073-10| Q. And is it your understanding that
00073-11| REST was a process that could be used to control
00073-12| nicotine yields in particular tobacco?
00073-13| MR. KREINER: Objection to the form.
00073-14| A. It could be used to extract lots of
00073-15| things from tobacco and then re-add them to the
00073-16| same tobacco is my understanding that's what it
00073-17| was.
00073-18| Q. And nicotine was one of those
00073-19| things?
00073-20| A. Yes.
00073-21| Q. Is this a process -- or in what way
00073-22| is this process different than the G7 process we
00073-23| were talking about earlier?
00073-24| MR. KREINER: Objection to the form.
00073-25| A. The G7 process is a process for

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00074-01| reconstituting tobacco from scrap, dust, stems,
00074-02| that kind of thing, it's a paper-making process
00074-03| that is used to take tobacco that is not in a
00074-04| usable form, usable for manufacturing a cigarette,
00074-05| and converting it into a material that is usable.
00074-06| My understanding of REST -- so
00074-07| that's what G7 is.
00074-08| REST, in my understanding, was a
00074-09| process that was being looked at for extracting
00074-10| tobacco that was already usable for or could have
00074-11| been already usable for making cigarettes out of,
00074-12| and then putting extract or parts of it back on
00074-13| the same tobacco.
00074-14| Q. So one of the differences is the G7
00074-15| process would take tobacco scrap and then put that
00074-16| back into a different set of tobacco, whereas the
00074-17| REST process would take something out of the
00074-18| tobacco and then put it back into the same
00074-19| tobacco?
00074-20| MR. KREINER: Objection to the form.
00074-21| A. Again I'm going to preface my remark
00074-22| by telling you I'm not a tobacco process guy, I
00074-23| don't, I'm not an expert of it.
00074-24| My understanding of the G7 process

|00074-25| is a, an amount of scrap tobacco or dust or some
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|00075-01| kind of tobacco that wasn't strictly usable at
|00075-02| that point to be used, put in a cigarette, would
|00075-03| be treated to make it into a paper-like material
|00075-04| that we chopped up and shredded and used as what
|00075-05| we called cut filler -- that is, tobacco that has
|00075-06| been cut up and can be used to fill cigarette
|00075-07| rods, cigarettes with.

|00075-08| So it wouldn't necessarily be -- I
|00075-09| think one of the distinctions you were making
|00075-10| there was one that had to do with tobacco that was
|00075-11| the same and one that wasn't the same. But the
|00075-12| continuous nature of the G7 process, the tobacco
|00075-13| end up getting -- it's the same stuff. I mean,
|00075-14| you don't take one kind of tobacco and grind it up
|00075-15| and make the sheet out of it and use the extract
|00075-16| normally from someplace else, it is all coming
|00075-17| from the same bunch of tobacco with the same bunch
|00075-18| of scrap, it just ends up in a different physical
|00075-19| form as sheet as opposed to a pile of dust or
|00075-20| torn-up stems or whatever.

|00075-21| REST, my understanding of REST was
|00075-22| that the tobacco would already have been in a cut
|00075-23| filler form, that is, usable tobacco; and it could
|00075-24| be extracted to take out whatever you wanted to
|00075-25| take out and then recon bind with the same stuff
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|00076-01| that came from it.

|00076-02| Q. So both, both processes extracted
|00076-03| portions or extracted something from tobacco and
|00076-04| then put back what was left into the product?

|00076-05| MR. KREINER: Objection to the form.

|00076-06| A. Both of them involved a step like
|00076-07| that, yes.

|00076-08| Q. And this REST process also used
|00076-09| ammonia in the extraction process?

|00076-10| MR. DAVIS: Objection.

|00076-11| MR. KREINER: Objection.

|00076-12| A. Excuse me, I believe that's what it
|00076-13| says in the document.

|00076-14| Well, actually, I'm sorry, it
|00076-15| specifically says "an aqueous extract of tobacco
|00076-16| was ammoniated." So I don't know whether they
|00076-17| meant they ammoniated the tobacco while they were
|00076-18| extracting it, or whether they, it seems to me
|00076-19| they are talking about extracting it with
|00076-20| tobacco -- with water and then ammoniating that
|00076-21| extract.

|00076-22| Q. And then that extract would be put
|00076-23| back into the tobacco or into the product?

|00076-24| MR. KREINER: Objection to the form.

|00076-25| A. That's when they are talking about
----- PAGE00077 -----

|00077-01| here in this document, I think. Back into
|00077-02| tobacco, not necessarily back into a product.

|00077-03| Q. And in that second paragraph under,
|00077-04| "Background," the second sentence, it says, "The
|00077-05| CFC-11 is recovered by a thin-film evaporation
|00077-06| leaving an extract that is 84% pure nicotine."

|00077-07| Now is it your understanding that
|00077-08| the extract that is recovered through the REST
|00077-09| process that they are describing would then be 84%

00077-10 | pure nicotine?
00077-11 | MR. KREINER: Objection to the form.
00077-12 | A. The CFC-11, that which was extracted
00077-13 | into the CFC-11 and then evaporated would be 84%
00077-14 | pure nicotine according to this document.
00077-15 | Q. And then it is your understanding
00077-16 | that that portion would be put back into the
00077-17 | product or back into the tobacco?
00077-18 | MR. KREINER: Objection to form.
00077-19 | A. The, the document states here, and
00077-20 | that's, and this is all I know about it, is that
00077-21 | the nicotine would be added back to the extract,
00077-22 | presumably the aqueous extract, and then that
00077-23 | extract would be returned to the tobacco.
00077-24 | Q. And is this process a process which
00077-25 | can be used to control the level of nicotine in a

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00078-01 | particular product?
00078-02 | MR. DAVIS: Objection.
00078-03 | MR. KREINER: Objection to the form.
00078-04 | A. According to what the document says,
00078-05 | it could be used to control the amount of nicotine
00078-06 | that was in a lot of tobacco and then presumably
00078-07 | in a cigarette.
00078-08 | Q. I would like to turn your attention
00078-09 | to the fourth page of this exhibit, which is side
00078-10 | Bates stamped 50988 7181, the RJRT interoffice
00078-11 | memorandum to Thomas A. Perfetti from Rhenda H.
00078-12 | Steele dated February 22, 1990.
00078-13 | The middle paragraph of this
00078-14 | document, the second sentence, Ms. Steele states,
00078-15 | "Smoke condensate from cigarettes containing the
00078-16 | flavorants did not appear to be more active than
00078-17 | condensate from cigarettes without the
00078-18 | flavorants."
00078-19 | Now Rhenda Steele is or was at that
00078-20 | time a toxicologist for R.J. Reynolds; is that
00078-21 | correct?
00078-22 | A. I don't remember her exact
00078-23 | background. She worked in the, she worked in the
00078-24 | Scientific Affairs Division and I believe she
00078-25 | actually -- I don't know if in 1990 she was, but

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00079-01 | eventually she did become a board-certified
00079-02 | toxicologist.
00079-03 | Q. But her employment at R.J. Reynolds
00079-04 | involved toxicology; is that correct?
00079-05 | A. I believe that it did.
00079-06 | Q. Now when she states that the
00079-07 | flavorants did not appear to be more active than
00079-08 | condensate from cigarettes, is what is your
00079-09 | understanding of the term, "more active," what
00079-10 | does that refer to?
00079-11 | MR. DAVIS: Objection.
00079-12 | MR. KREINER: Objection to the form.
00079-13 | A. From looking at this document -- and
00079-14 | I'll again say I'm not a toxicologist; I'm not a
00079-15 | molecular biologist; I am not a biologist of any
00079-16 | kind, as a matter of fact.
00079-17 | Q. You are a chemist, though, is that
00079-18 | correct?
00079-19 | A. I'm a chemist, but they are talking
00079-20 | about testing in salmonella. My presumption from

00079-21| reading this is that they're talking about what is
00079-22| called the Ames assay; and she appears to be
00079-23| stating that cigarettes containing these
00079-24| flavorants were compared with other flavorants,
00079-25| and that in the salmonella or Ames assay there was

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00080-01| no difference in their, quote, "activity,"
00080-02| unquote.
00080-03| Q. And what, what is the Ames assay?
00080-04| MR. KREINER: Objection to form.
00080-05| A. It is an assay that was I believe
00080-06| named for its inventor or developer, Dr. Bruce
00080-07| Ames. And it involves exposing bacteria to
00080-08| chemicals to determine whether or not those
00080-09| chemicals in that assay can affect the development
00080-10| of these bacteria to be able to manufacture
00080-11| certain amino acids.
00080-12| Q. Is the Ames assay used to assess the
00080-13| mutagenicity of a compound?
00080-14| A. That's my understanding, that the
00080-15| Ames assay is used to assay or compare
00080-16| mutagenicity of compounds.
00080-17| Q. And does it do this by coming up
00080-18| with what's called an Ames number?
00080-19| A. That's the number that they end up
00080-20| reporting, yes.
00080-21| Q. And how are the numbers reported
00080-22| generally?
00080-23| A. Well, they were, my recollection is
00080-24| they are reported in several different ways, one
00080-25| of which is a number of revertants per plate. And

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00081-01| there is, I think there's other ways to talk about
00081-02| it but I don't recall specifically what they are.
00081-03| Q. And what is that word you used?
00081-04| A. Revertants.
00081-05| Q. And is that synonymous with a mutant
00081-06| or a mutation?
00081-07| MR. KREINER: Objection to the form.
00081-08| A. I don't know what a biologist would
00081-09| say. It has to do with the number of viable
00081-10| colonies of bacteria that are left on this plate
00081-11| after they have been treated. And how they
00081-12| actually calculate that number and exactly what
00081-13| means, I don't really mean.
00081-14| Q. When you say "viable," do you mean
00081-15| nonmutated?
00081-16| A. No, I mean --
00081-17| Q. Ones that are --
00081-18| A. -- alive, ones that are alive.
00081-19| Q. And a mutagen can cause a change in
00081-20| the genetic code; is that correct?
00081-21| MR. KREINER: Objection to the form,
00081-22| foundation.
00081-23| A. That's my understanding that it can.
00081-24| THE VIDEOGRAPHER: We've got five
00081-25| minutes left on this videotape.

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00082-01| Q. Is it also your understanding that
00082-02| some mutagenic compounds are linked to tumor
00082-03| formation?
00082-04| MR. KREINER: Objection to the form.
00082-05| A. I'm sorry?

00082-06| Q. Is it your understanding that some
00082-07| mutagenic compounds are linked to tumor formation?
00082-08| MR. KREINER: Objection to form.
00082-09| A. Again, I'll tell you that I'm not a
00082-10| biologist but I believe that's, that's the
00082-11| literature states that.
00082-12| Q. Were you ever involved at Reynolds
00082-13| in any research to determine the Ames number of
00082-14| particular cigarettes? Strike that. Strike that.
00082-15| Did you ever -- well, why don't we
00082-16| change the tape now.
00082-17| THE VIDEOGRAPHER: This concludes
00082-18| Tape 1 at 11:13.
00082-19| (Brief recess.)
00082-20| THE VIDEOGRAPHER: This begins Tape
00082-21| 2 on the record at 11:21.
00082-22| BY MR. SAHAM:
00082-23| Q. Dr. Reynolds, do you recall doing
00082-24| any research regarding the Ames numbers or
00082-25| regarding Ames numbers comparing the effect of

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00083-01| particular cigarettes?
00083-02| MR. KREINER: Objection to the form.
00083-03| A. I didn't, I don't recall that I
00083-04| specifically did that, that I specifically
00083-05| conducted those experiments because the Ames
00083-06| assays were done in another part of the company.
00083-07| Surely, in regard to the duty I had
00083-08| in the HRC, we'd see lots of documents about the
00083-09| Ames numbers because the toxicology people
00083-10| routinely ran those; and there would, could have
00083-11| been experiments that would have been run in my,
00083-12| in the division that I was part of where the
00083-13| cigarettes would have been evaluated for Ames
00083-14| numbers. And there was a specific instance during
00083-15| the evaluation of the Premier product in which one
00083-16| of the pieces of research we did had to do with
00083-17| the mutagen, with mutagenicity.
00083-18| Q. And comparing the mutagenicity rate
00083-19| caused by the Premier product or exposure to the
00083-20| Premier product as opposed to a standard
00083-21| cigarette, was that an experiment that was
00083-22| conducted?
00083-23| A. Well, it was really, it didn't
00083-24| exactly compare to the mutagenicity of the
00083-25| material from the cigarette, it was mutagenicity

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00084-01| of urine from smokers.
00084-02| Q. So the experiment or as part of the
00084-03| experiment or as the experiment, one group of
00084-04| smokers smoked the Premier product, the second
00084-05| group of smokers smoked a standard cigarette, and
00084-06| then the urine of those individuals were sampled
00084-07| and Ames numbers were ran on those samples; is
00084-08| that correct?
00084-09| MR. KREINER: Objection to the form.
00084-10| A. The samples of the urine were
00084-11| evaluated by the Ames assay, that's correct.
00084-12| Q. Do you remember what the results of
00084-13| those Ames numbers were with respect to comparing
00084-14| the Premier project to the standard cigarette --
00084-15| A. The, the --
00084-16| Q. -- in those individuals?

00084-17| A. I'm sorry. As I recall, the result
00084-18| was that the urine from smokers who had been
00084-19| smoking Premier for a certain number of days, and
00084-20| I forget the exact number of days, was reduced
00084-21| compared to the people who were smoking the
00084-22| standard cigarette -- or the reference cigarette
00084-23| as we call it. It was not a standard cigarette,
00084-24| it was a reference cigarette.

00084-25| Q. Do you remember what the reference

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00085-01| cigarette was?

00085-02| A. No, I don't recall it specifically.
00085-03| It is described in the literature.

00085-04| Q. Did the reference cigarette bear any
00085-05| significance, strike that. Did the referenced
00085-06| cigarette have any significant differences from a
00085-07| standard cigarette manufactured by Reynolds?

00085-08| MR. KREINER: Objection to the form.

00085-09| A. It wasn't, we didn't just take a
00085-10| particular cigarette brand out of the mix, it was
00085-11| specifically designed to be a reference for this;
00085-12| it had tobacco, chopped-up tobacco wrapped up in
00085-13| paper with a filter and it was like any other
00085-14| cigarette to that extent.

00085-15| Q. And can you briefly describe how the
00085-16| Premier cigarette differed from that reference
00085-17| cigarette or standard cigarette?

00085-18| MR. DAVIS: Objection.

00085-19| A. Briefly, I don't -- Premier heated
00085-20| tobacco and the reference cigarette burned
00085-21| tobacco. That's the briefest I can be.

00085-22| Q. Going back to the portion of the
00085-23| document we were just talking about, the document
00085-24| being Exhibit 6, the fourth page, the interoffice
00085-25| office memorandum from Rhenda Steele where she

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00086-01| states, in the second sentence of the second
00086-02| paragraph, "Smoke condensate from cigarettes
00086-03| containing the flavorants did not appear to be
00086-04| more active than condensate from cigarettes
00086-05| without the flavorants."

00086-06| Does more active -- does the
00086-07| statement "more active," does that bear any
00086-08| relationship to an Ames assay?

00086-09| MR. KREINER: Objection to the form.

00086-10| A. My presumption is that because of
00086-11| what the document is about and what the second
00086-12| paragraph seems to be saying, that she is
00086-13| referring to the -- she is comparing the results
00086-14| from smoke condensates with cigarettes containing
00086-15| these flavorants that are described versus ones
00086-16| that don't have those flavorants.

00086-17| Q. And she appears to be saying that --

00086-18| A. There is no difference between those
00086-19| two, the condensate from those two cigarettes.

00086-20| Q. And in the mutagenicity?

00086-21| A. In the mutagenicity that comes from
00086-22| the Ames assay.

00086-23| Q. Is it your understanding that
00086-24| generally the Ames assay of an experimental group
00086-25| exposed to cigarette smoke would be higher than

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00087-01| the Ames assay of a group not exposed to cigarette

00087-02 | smoke?
00087-03 | MR. DAVIS: Objection.
00087-04 | MR. KREINER: Objection to the form.
00087-05 | A. Would you restate? I don't quite
00087-06 | understand what the question is, I'm sorry.
00087-07 | Q. If you -- in your tenure at Reynolds
00087-08 | some experiments were conducted where one group in
00087-09 | the experiment would be exposed to cigarette smoke
00087-10 | or cigarette condensate and the other group in the
00087-11 | experiment would not be exposed to that; is that
00087-12 | correct?
00087-13 | MR. KREINER: Objection to the form.
00087-14 | MR. DAVIS: Objection, I would like
00087-15 | for you to rephrase that.
00087-16 | MR. SAHAM: I think that's a
00087-17 | reasonable request.
00087-18 | MR. DAVIS: If you would.
00087-19 | BY MR. SAHAM:
00087-20 | Q. The experiment referenced here by
00087-21 | Ms. Steele references that certain strains of
00087-22 | salmonella were treated with these two different
00087-23 | strains of condensate; is that correct?
00087-24 | A. That's correct.
00087-25 | Q. Other experiments -- are you aware
----- PAGE00088 -----
00088-01 | of other experiments conducted during your tenure
00088-02 | at Reynolds where one group of salmonella, of
00088-03 | mice, people, anything, one group was exposed to
00088-04 | cigarette smoke or treated with condensate and a
00088-05 | second experimental group was not exposed, was a
00088-06 | control group not exposed to anything?
00088-07 | MR. KREINER: Objection to the form.
00088-08 | MR. DAVIS: Objection.
00088-09 | A. Well, that's an incredibly broad
00088-10 | number of areas you're asking me questions
00088-11 | about -- asking me that question about. And, you
00088-12 | know, I was not in the unit that did the research
00088-13 | on the Ames assay or these other kinds of assays
00088-14 | so I don't know for a fact that they actually did
00088-15 | an experiment like that. I would expect that they
00088-16 | probably did, but I didn't do it.
00088-17 | Q. Is it your understanding that the
00088-18 | Ames assay, or would you expect that, would you
00088-19 | expect that the Ames assay of a group treated with
00088-20 | cigarette condensate would be higher than the Ames
00088-21 | assay of an experimental group not treated with
00088-22 | cigarette condensate?
00088-23 | MR. KREINER: Objection to the form.
00088-24 | A. If you mean a group of -- by
00088-25 | "group," are you talking about the bacteria or
----- PAGE00089 -----
00089-01 | something else? You know, because there's --
00089-02 | Q. Well, first --
00089-03 | A. -- different levels.
00089-04 | Q. -- first let's talk about bacteria.
00089-05 | A. Okay. So you are asking me if a
00089-06 | group of -- if some bacteria were treated with
00089-07 | cigarette smoke condensate and you got a number, a
00089-08 | revertant number from that, an Ames result, and
00089-09 | you had a second group of bacteria that were not
00089-10 | treated with cigarette smoke condensate and you
00089-11 | got a number from that, would I expect those
00089-12 | numbers to be different? Is that the question?

00089-13| Q. That's the question, that's correct.
00089-14| A. I believe that I would expect those
00089-15| to be different, depending on the exact
00089-16| methodology and the exact conditions of the
00089-17| experiment, I would expect that they might be
00089-18| different.
00089-19| Q. And how would you expect them to be
00089-20| different?
00089-21| MR. KREINER: Objection to form.
00089-22| A. It would depend on what the stuff
00089-23| was in the experiments.
00089-24| Q. Would you expect the Ames assay of
00089-25| the or the Ames number of the treated group to be

----- PAGE00090 -----

00090-01| higher than that of the nontreated group?
00090-02| MR. DAVIS: Objection.
00090-03| MR. KREINER: Objection to the form.
00090-04| A. If that were the only difference in
00090-05| the groups, I think I would expect, generally
00090-06| speaking, that there would be a higher number from
00090-07| the Ames group -- from the treated group than the
00090-08| nontreated group.
00090-09| Q. And in that higher number would be a
00090-10| higher mutagenicity rate; is that correct?
00090-11| MR. DAVIS: Objection.
00090-12| MR. KREINER: Objection to the form.
00090-13| A. As far as I understand the Ames
00090-14| assay, that's what I would expect that would be
00090-15| the interpretation.
00090-16| Q. I'm not sure if I have already asked
00090-17| you this, but I apologize if I have. Do you agree
00090-18| that some mutagenic compounds are linked to tumor
00090-19| formation?
00090-20| MR. KREINER: Objection to the form.
00090-21| A. I think that was what the literature
00090-22| would say, that some are.
00090-23| Q. So you wouldn't dispute that
00090-24| statement?
00090-25| MR. KREINER: Objection to the form.

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00091-01| A. It would depend on the particular
00091-02| compounds I think. I don't think that all
00091-03| mutagens are linked to tumor formations and not
00091-04| all tumor -- not all compounds linked to tumor
00091-05| formations are mutagens as far as I know.
00091-06| Q. But some --
00091-07| A. Again, some, you know, given the
00091-08| fact that I'm not a molecular biologist or a
00091-09| oncologist, some mutagens are linked to tumor
00091-10| formation is my understanding.
00091-11| Q. I would like to turn your attention
00091-12| to the next page of Exhibit 6, which is an
00091-13| April 1, 1992, document from Barry Smith Fagg
00091-14| regarding project number entitled, "0307.
00091-15| Extraction Investigations." It is entitled,
00091-16| "REST: Re-establishment of Soluables in Tobacco
00091-17| Controlled Nicotine Processing and Material
00091-18| Characteristics."
00091-19| MR. KREINER: Could you give the
00091-20| Bates number, counselor? I don't think the
00091-21| witness has it.
00091-22| MR. SAHAM: And the -- yeah. The
00091-23| side Bates number is 50988 9290.

00091-24| A. Okay, that wasn't the next page,
00091-25| there's an intervening page in my copy. But I
----- PAGE00092 -----

00092-01| have 50988 9290?
00092-02| MR. DAVIS: That's it, that's the
00092-03| one he referred to.
00092-04| A. 0307. Extraction Investigations.
00092-05| BY MR. SAHAM:
00092-06| Q. Right. An you're correct, there is
00092-07| an intervening page. And do you recognize this
00092-08| document, have you ever seen it before?
00092-09| MR. KREINER: And "this document"
00092-10| just being this page, counselor?
00092-11| MR. SAHAM: Yes, just this page.
00092-12| MR. KREINER: All right.
00092-13| MR. SAHAM: Which is the Fagg or,
00092-14| yeah, the Fagg April 1, 1992, document.
00092-15| THE WITNESS: I, I don't recall
00092-16| seeing this page before.
00092-17| BY MR. SAHAM:
00092-18| Q. And under the objective, which is
00092-19| the first paragraph, the objective of REST,
00092-20| presumably Mr. Fagg states, "The purpose this work
00092-21| was to develop the ability to modify the nicotine
00092-22| content of tobacco by utilizing two existing
00092-23| process technologies: REST processing and
00092-24| denicotinization of aqueous tobacco extracts."
00092-25| Do you generally agree, or does that
----- PAGE00093 -----

00093-01| statement fit with your understanding of the
00093-02| objective of the REST technology?
00093-03| MR. KREINER: Objection to the form,
00093-04| foundation.
00093-05| A. I don't, I don't recall seeing what,
00093-06| a formal statement of what the objective of the
00093-07| whole REST investigation was. Obviously, he says
00093-08| that the part he was working on had those two
00093-09| objectives -- had this objective, this purpose,
00093-10| I'm sorry, the evalu- -- the development of the
00093-11| ability to modify nicotine by REST and
00093-12| denicotinization of aqueous tobacco extracts.
00093-13| Q. Is that consistent with your
00093-14| understandings of the purpose of the REST process?
00093-15| MR. KREINER: Objection.
00093-16| MR. DAVIS: Objection, he just
00093-17| answered.
00093-18| A. My understanding of the REST process
00093-19| was that it was to look at ways to change lots of
00093-20| things in the aqueous extract of tobacco.
00093-21| Q. And is Mr. Fagg's statement
00093-22| consistent with that understanding?
00093-23| MR. KREINER: Objection to form.
00093-24| MR. DAVIS: Objection.
00093-25| A. In the nicotine is in the aqueous
----- PAGE00094 -----

00094-01| extract, I would say that's true.
00094-02| Q. Then Mr. Fagg goes on in that
00094-03| paragraph to state, "The ability to control
00094-04| nicotine levels in tobacco lamina while
00094-05| maintaining original physical structure and
00094-06| controlling the level of non-nicotine tobacco
00094-07| water solubles, via REST, will allow the company
00094-08| to consistently control nicotine levels in

00094-09 | conventional products and provide unique
00094-10 | opportunities for products with unconventional
00094-11 | tobacco nicotine levels."
00094-12 | Is that statement by Mr. Fagg also
00094-13 | consistent with your understanding of the purposes
00094-14 | of the REST process?
00094-15 | MR. KREINER: Objection to form.
00094-16 | A. That's what he says it is.
00094-17 | Q. And is that, is that statement
00094-18 | inconsistent with your understanding of the
00094-19 | process?
00094-20 | MR. DAVIS: Objection.
00094-21 | MR. KREINER: Objection to the form.
00094-22 | A. That's what Mr. Fagg is saying it
00094-23 | can be used for. And it could be used -- my
00094-24 | understanding is the REST process could have been
00094-25 | used to control or modify lots of different

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00095-01 | materials in the extract, nicotine being one.
00095-02 | Q. But it could be used for the
00095-03 | procedure or process Mr. Fagg is describing; is
00095-04 | that correct?
00095-05 | A. As far as I understand, in the
00095-06 | development area -- in the experimental area that
00095-07 | he was working, on it could be used for that.
00095-08 | Could have been used for that.
00095-09 | Q. Do you know if the REST process was
00095-10 | ever integrated into Reynolds' manufacturing
00095-11 | process?
00095-12 | A. I believe that it was not.
00095-13 | Q. Do you know why it was not?
00095-14 | A. No, I don't.
00095-15 | Q. Is it your understanding that freon
00095-16 | 123 is a biologically active material?
00095-17 | MR. KREINER: Objection to the form.
00095-18 | A. I don't know what the biological
00095-19 | activity of freon 123 is.
00095-20 | Q. Do you know if exposure to freon 123
00095-21 | leads to mutagenicity?
00095-22 | A. No, I --
00095-23 | MR. KREINER: Objection to the form.
00095-24 | A. I do not know that.
00095-25 | Q. Have you ever heard of a KDN

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00096-01 | process?
00096-02 | A. Yes, sir.
00096-03 | Q. Could you -- and was that process
00096-04 | also used to extract materials including nicotine
00096-05 | from tobacco?
00096-06 | A. Again, I want to preface my remark
00096-07 | by saying I'm not a tobacco processing expert. I
00096-08 | didn't run the KDM process; all I know is what I
00096-09 | have read and some people told me.
00096-10 | K is the code for burley tobacco.
00096-11 | That was the -- many of the materials used in the
00096-12 | manufacturing process had code words or letters
00096-13 | associated with them for the purpose of keeping
00096-14 | trade secrets and maintaining the confidentiality
00096-15 | of recipes. K was the code that was used for
00096-16 | burley.
00096-17 | "DN" means denicotinization. As I
00096-18 | described to you earlier, the denic process, the
00096-19 | denicotinization process, was used to remove

00096-20| nicotine from tobaccos that might have high levels
00096-21| owing to culture, agricultural or climactic
00096-22| conditions.
00096-23| Burley tobacco was a tobacco that
00096-24| apparently, from my understanding from talking to
00096-25| the blend people, in some years had to be treated

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00097-01| in that fashion. So they called the process by
00097-02| which they denicotinized burley tobacco, KDN. So
00097-03| that, to my knowledge, that's what KDN means.
00097-04| Q. Did anyone ever discuss with you
00097-05| during your tenure at Reynolds or were you ever
00097-06| aware of a problem with the KDN process where too
00097-07| much ammonia was left in the solution?
00097-08| MR. DAVIS: Objection.
00097-09| MR. KREINER: Objection to the form.
00097-10| A. I'm not aware of that.
00097-11| Q. Do you know if the KDN process was
00097-12| ever integrated into any Reynolds manufacturing
00097-13| process?
00097-14| MR. KREINER: Objection to the form.
00097-15| A. The denicotinization process, as I
00097-16| described, I believe that tobacco was actually
00097-17| used in -- the tobacco that was denicotinized was
00097-18| used in commercial cigarettes.
00097-19| Q. Are there any negative health
00097-20| effects that could result from the smoking of a
00097-21| cigarette that contained too much ammonia?
00097-22| MR. KREINER: Objection to the form.
00097-23| MR. DAVIS: Objection.
00097-24| A. I don't know.
00097-25| MR. SAHAM: Could we mark this as

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00098-01| Exhibit 7, please.
00098-02| Seven.
00098-03| (Deposition Exhibit No. 7 was
00098-04| marked for identification and is
00098-05| bound separately.)
00098-06| BY MR. SAHAM:
00098-07| Q. Dr. Reynolds, would you please take
00098-08| a look at this document. And for the record,
00098-09| Exhibit 7, the first page is a interoffice
00098-10| memorandum dated April 2, 1987, from A. B. Norman
00098-11| and J. H. Reynolds to a distribution list of seven
00098-12| people listed on the document. And this document
00098-13| bears bottom Bates Nos. RJM003311 through 14.
00098-14| And this document also appears to
00098-15| contain a separate and distinct interoffice
00098-16| memorandum which makes up the last three pages of
00098-17| the document, and that's dated April 2, 1987. It
00098-18| is also from A. B. Norman and J. H. Reynolds but
00098-19| is directed to Mr. F. H. Christopher.
00098-20| MR. KREINER: Again, objection to
00098-21| what the document is, it speaks for itself.
00098-22| (Witness peruses document.)
00098-23| BY MR. SAHAM:
00098-24| Q. Dr. Reynolds, do you recognize these
00098-25| two interoffice memorandums that are attached as

----- PAGE00099 -----

00099-01| Exhibit 7?
00099-02| A. I believe that I do.
00099-03| Q. And is that your signature that
00099-04| appears on the first two pages of Exhibit 7?

00099-05| A. Yes, it is.
00099-06| Q. And is this a -- are these
00099-07| memorandums, memorandums that you authored in your
00099-08| capacity or in your employment at R.J. Reynolds in
00099-09| April of 1987?
00099-10| A. Yes, I believe they are.
00099-11| Q. Can I turn your attention to the
00099-12| second page, which is labeled "Subject: Summary of
00099-13| 1986 Smoking Behavior Research." Did you conduct
00099-14| certain smoking behavior research in the mid 1980s
00099-15| for R.J. Reynolds?
00099-16| A. Yes.
00099-17| Q. And attached to this April 2, 1987,
00099-18| memo is a document entitled, "Summary of Findings
00099-19| of 1986 Smoking Behavior Work." Is this a
00099-20| document that you drafted?
00099-21| A. I believe that it is.
00099-22| Q. And you drafted this in your
00099-23| ordinary course of business for R.J. Reynolds back
00099-24| in 1986; is that correct?
00099-25| A. I believe that's correct.

----- PAGE00100 -----

00100-01| Q. And under "Summary of Findings," No.
00100-02| 1, "Puff Profile Results," the first bullet point
00100-03| states, "For the panel as a whole, puff volume,
00100-04| frequency of puffing and numbers of puffs taken in
00100-05| creased with decreasing FTC tar delivery of the
00100-06| test cigarettes."
00100-07| Could you briefly for me describe
00100-08| the research that you were conducting that is
00100-09| described in this document?
00100-10| MR. KREINER: Objection to the form.
00100-11| A. I don't know that I recall the exact
00100-12| experiments that were run. But generally
00100-13| speaking, we had the ability to measure puffing
00100-14| behavior of people smoking cigarettes; and we
00100-15| were, and that's what we looked at was their
00100-16| puffing behavior.
00100-17| Q. Was one of your findings that the --
00100-18| if you took a cigarette and decreased the amount
00100-19| of tar and nicotine in the cigarette that smoking
00100-20| subjects would increase their puff volume and puff
00100-21| frequency?
00100-22| MR. KREINER: Objection to the form.
00100-23| A. If you looked at a group of smokers
00100-24| as a whole that was the trend that you would see,
00100-25| that when you compared their smoking behavior or

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00101-01| smoking a cigarette like a Winston versus a --
00101-02| which is, I forget, 10 or 12 milligrams of tar --
00101-03| versus something like a Now, which was 1 milligram
00101-04| of tar by FTC, that they would change their
00101-05| behavior.
00101-06| Q. Have you ever heard the term
00101-07| "compensation" used to describe this phenomenon?
00101-08| A. I have heard that term.
00101-09| Q. And would you, would you say that
00101-10| compensation is a smoker who smokes a low
00101-11| nicotine/tar cigarette -- strike that.
00101-12| And would compensation be a
00101-13| description of a phenomenon whereby a smoker who
00101-14| is smoking a low tar/low nicotine cigarette will
00101-15| compensate for the low level of nicotine in that

00101-16 | product by increasing their puff volume and puff
00101-17 | frequency?
00101-18 | MR. KREINER: Objection to the form.
00101-19 | MR. DAVIS: Objection.
00101-20 | A. Whenever you would -- when you,
00101-21 | generally speaking, you will find that there's a
00101-22 | large variation in an individual's smoking
00101-23 | behavior from one individual to the next. If you
00101-24 | compare groups of people smoking cigarettes of
00101-25 | different tar and nicotine levels, you will find
----- PAGE00102 -----
00102-01 | them changing their puffing behavior. Whether it
00102-02 | is linked specifically to the nicotine content of
00102-03 | the smoke, I don't know; I don't think that that's
00102-04 | the determining factor.
00102-05 | Q. But as a general trend, people
00102-06 | smoking -- in this study, you observed that people
00102-07 | smoking low tar/nicotine cigarettes increased both
00102-08 | their puff frequency and puff volume?
00102-09 | MR. DAVIS: Objection.
00102-10 | Q. As a general trend?
00102-11 | MR. DAVIS: Objection.
00102-12 | MR. KREINER: Objection to the form.
00102-13 | A. That's what the results stated here
00102-14 | says. You know, for panel as a whole, puff
00102-15 | volume, frequency, and number of puffs increased
00102-16 | with decreasing FTC tar delivery of the test
00102-17 | cigarettes.
00102-18 | Q. Did you conduct any other research
00102-19 | other than the research described here on this
00102-20 | issue?
00102-21 | A. We conducted many, many studies of
00102-22 | human smoking behavior, not all of which had to do
00102-23 | with the comparison of different tar levels of
00102-24 | cigarettes. Generally speaking, when that was a
00102-25 | component, you would find this trend.
----- PAGE00103 -----
00103-01 | Q. So generally when people in these
00103-02 | type of experiments were confronted with a low
00103-03 | tar/low nicotine cigarette, they would increase
00103-04 | both their puff frequently and puff volume as a
00103-05 | general trend?
00103-06 | MR. KREINER: Objection to the form,
00103-07 | asked and answered.
00103-08 | A. As a general trend. But still you
00103-09 | would, I want to reiterate that individual smoking
00103-10 | behaviors are what they are and an individual
00103-11 | might do whatever they want to do. But generally
00103-12 | speaking, if you look at the mean behaviors of
00103-13 | these populations that's what you would find.
00103-14 | Q. So as a result of that trend,
00103-15 | someone smoking a low tar/nicotine cigarette could
00103-16 | still take in the same amount of tar and nicotine
00103-17 | as they otherwise would in smoking a higher
00103-18 | tar/higher nicotine cigarette; is that correct?
00103-19 | MR. DAVIS: Objection.
00103-20 | MR. KREINER: Objection to the form.
00103-21 | A. That's possible. I don't know if
00103-22 | that's what would happen or not.
00103-23 | Q. But that is possible?
00103-24 | A. It is possible.
00103-25 | Q. Did you do any -- strike that.
----- PAGE00104 -----

00104-01 | Did any of these studies relate to
00104-02 | or relate specifically to commercialized low
00104-03 | tar/low nicotine cigarettes.
00104-04 | MR. KREINER: Objection to the form.
00104-05 | A. According to -- well, we're talking
00104-06 | about comparing Marlboros and Winstons here,
00104-07 | largely. I remember that we did some studies that
00104-08 | had commercial low tar cigarettes in them, yes.
00104-09 | Q. Which cigarettes were those?
00104-10 | A. Well, I can't recall exactly.
00104-11 | Probably we would look at one of our low tar
00104-12 | products, which would have been Now, and probably
00104-13 | look at competitive low tar products; but I can't
00104-14 | recall specific experiments in which we did that.
00104-15 | Q. Do you recall generally that the
00104-16 | experiments conducted with products such as Now
00104-17 | the results were consistent with those described
00104-18 | in Exhibit 7?
00104-19 | MR. KREINER: Objection to the form.
00104-20 | A. I would say that my recollection is
00104-21 | that low tar cigarettes in general were smoked
00104-22 | very similarly depending on, you know, by the
00104-23 | smokers no matter whose product it was.
00104-24 | Q. I want to draw your attention to the
00104-25 | second bullet point on this page under No. 3,

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00105-01 | "Blood Nicotine Results," where it stays, "The
00105-02 | maximum change in blood nicotine concentration
00105-03 | which occurred during smoking was the same for
00105-04 | male Marlboro and Winstons smokers when smoking
00105-05 | either Marlboro or Winston."
00105-06 | Do you believe that that statement
00105-07 | is correct?
00105-08 | A. That's what I reported.
00105-09 | Q. And there is a variation in the
00105-10 | nicotine content of both, between Marlboro and
00105-11 | Winston; is that correct?
00105-12 | A. I think it's very nearly -- I don't
00105-13 | know what it was in, when these particular
00105-14 | cigarettes were manufactured or used, but I
00105-15 | believe that they are very similar.
00105-16 | Q. Do you recall any similar readings
00105-17 | taken on blood nicotine levels comparing a higher
00105-18 | tar/nicotine cigarette with a lower tar/nicotine
00105-19 | cigarette in a similar experiment?
00105-20 | MR. KREINER: Objection to the form.
00105-21 | A. I can't recall a specific experiment
00105-22 | right now. That's not to say that it wasn't done,
00105-23 | but I can't recall one specifically.
00105-24 | Q. The next bullet point in this
00105-25 | experiment, you state, "When Marlboro or Winston

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00106-01 | smokers smoke their usual brand, maximum blood
00106-02 | nicotine concentrations were best predicted by
00106-03 | puff volume." Do you believe that to be correct?
00106-04 | MR. KREINER: Objection to the form.
00106-05 | A. I'm reporting the results that we
00106-06 | observed, so I believe that's the correct
00106-07 | reportage of it.
00106-08 | Q. So it was your understanding as a
00106-09 | result of this research that puff volume was the
00106-10 | best predictor when comparing these types, two
00106-11 | types, of cigarettes of the blood nicotine level;

00106-12 | is that correct?
00106-13 | MR. KREINER: Objection to the form.
00106-14 | A. When this particular experiment was
00106-15 | run, with the particular groups of smokers that we
00106-16 | utilized and the particular versions, commercial
00106-17 | versions, of Marlboro and Winston were utilized,
00106-18 | that was the result.
00106-19 | Q. And you, would you expect or do
00106-20 | you -- strike that.
00106-21 | Do you recall any similar experience
00106-22 | or any similar results when comparing a high
00106-23 | nicotine/tar cigarette with a low nicotine/tar
00106-24 | cigarette.
00106-25 | MR. KREINER: Objection to the form.

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00107-01 | A. I don't recall right now that we had
00107-02 | that similar result. But that's not to say we
00107-03 | didn't have it, I just don't recall.
00107-04 | Q. Is it your understanding that puff
00107-05 | volume is an important factor in blood nicotine
00107-06 | levels in smokers?
00107-07 | MR. KREINER: Objection to the form.
00107-08 | A. That's what this result states, that
00107-09 | in this particular case the maximum blood nicotine
00107-10 | concentration was best predicted by the puff
00107-11 | volume --
00107-12 | Q. Do you believe --
00107-13 | A. -- which means that if we look at
00107-14 | all the variables that were measured, that was the
00107-15 | one that seemed to have the highest correlation to
00107-16 | the blood nicotine level.
00107-17 | Q. Do you believe that that holds true
00107-18 | in general to other types of cigarettes?
00107-19 | MR. KREINER: Objection.
00107-20 | A. I don't know.
00107-21 | Q. Did you ever do any research on that
00107-22 | issue?
00107-23 | A. We did a lot of smoking behavior
00107-24 | research and I can't recall all the results. It,
00107-25 | it could have, could have been.

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00108-01 | Q. Is it your understanding that puff
00108-02 | volume is an important factor in determining blood
00108-03 | nicotine levels in all smokers?
00108-04 | MR. KREINER: Objection to the form.
00108-05 | A. Do you want to say that again,
00108-06 | please? Sir.
00108-07 | MR. SAHAM: Could you read that back
00108-08 | please.
00108-09 | (The reporter read back the pending
00108-10 | question.)
00108-11 | A. It is probably a factor. I don't
00108-12 | know if it is the most important or how I would
00108-13 | rank the relative importance. In fact, in this
00108-14 | particular document, in the very next paragraph --
00108-15 | I mean sentence, it says in that experiment, if
00108-16 | you did the, you know, analyzed the results
00108-17 | slightly differently or did another manipulation
00108-18 | of the test, of the presentation or whatever you
00108-19 | are looking at, that it changed.
00108-20 | Q. Is it your understanding that puff
00108-21 | frequency is an important component in determining
00108-22 | the blood nicotine levels in smokers?

00108-23| MR. KREINER: Objection to the form.
00108-24| A. Well, puff frequency, all of these,
00108-25| all of these puffing parameters have more or less

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00109-01| important effects on the yields of the products.
00109-02| So they can affect that, yes.
00109-03| I believe that I recall that in some
00109-04| experiments frequency was a weak predictor of
00109-05| anything.
00109-06| Q. So volume was, in your opinion, was
00109-07| a more important predictor?
00109-08| MR. DAVIS: Objection.
00109-09| A. In this particular experiment, in
00109-10| comparing those smokers smoking those cigarettes,
00109-11| it was a more important predictor.
00109-12| Q. I'd like to turn your attention to
00109-13| the next page under the "Overall Summary." The
00109-14| first bullet point, you state, "Puffing behavior
00109-15| is driven by cigarette design in the
00109-16| predispositions of the smokers of a given
00109-17| population. The changes in puffing behavior are
00109-18| directly related to smoke yields experienced by
00109-19| smokers."
00109-20| Do you believe that statement to be
00109-21| correct?
00109-22| MR. KREINER: Objection to the form.
00109-23| A. That's what I wrote. I believe
00109-24| that's correct.
00109-25| Q. Do you believe that it is correct

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00110-01| that an individual smoker will puff more in order
00110-02| to obtain a certain nicotine yield?
00110-03| MR. KREINER: Objection to the form.
00110-04| A. I don't know that that's what -- I
00110-05| don't think that -- my personal opinion is that it
00110-06| is not specifically nicotine yield that influences
00110-07| puffing behavior.
00110-08| Q. Did you ever do any research to
00110-09| determine the correctness of your opinion?
00110-10| A. We, the observations that we
00110-11| frequently made had to do with how long a puff
00110-12| lasted, when a puff began, when it ended, so that
00110-13| we understood how the individual was experiencing
00110-14| the smoke.
00110-15| Although I'm not a physiologist, it
00110-16| is, there is indication in the literature about
00110-17| the length of time that elapses between nicotine's
00110-18| inhalation and its distribution in the blood
00110-19| stream; and that's generally quite a large bit
00110-20| longer than the length of time it takes for a
00110-21| person to complete a puff.
00110-22| So, you know, aside from the sensory
00110-23| impact of nicotine, it is hard for me to
00110-24| understand how distribution of nicotine in the
00110-25| system would influence puffing behavior.

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00111-01| Q. Did you do any research specifically
00111-02| to look into the influence of nicotine on puffing
00111-03| behavior?
00111-04| A. We looked --
00111-05| MR. KREINER: Objection to form.
00111-06| A. Excuse me, sorry. I believe that we
00111-07| probably had some experimental cigarettes made

00111-08| that had different levels of nicotine in them to
00111-09| look to see what happened.
00111-10| Q. Do you remember the results of those
00111-11| experiments?
00111-12| A. There were a lot of experiments and
00111-13| I don't specifically recall the results of every
00111-14| one of them.
00111-15| Q. I call your attention to the third
00111-16| bullet point under "Overall Summary," where you
00111-17| state, "Smoker populations grouped by subjective
00111-18| ratings of products differ in smoking behavior."
00111-19| A. Right.
00111-20| Q. "The puffing behavior differences
00111-21| appear to be systematically linked to the wants of
00111-22| the subgroups."
00111-23| What do you mean by "the wants"?
00111-24| A. The product development people and
00111-25| the marketing people had lots of ways to ask

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00112-01| people, "What do you want about, what do you want
00112-02| in a cigarette? Do you want it to be smooth,
00112-03| harsh? Do you want it to be, taste good? Do
00112-04| you want it to be this, that or the other?"
00112-05| And/or they could identify -- and
00112-06| I'm not saying this was the particular case here
00112-07| because I don't, I don't remember exactly, "Do you
00112-08| like fast cars or do you, you know, like wine as
00112-09| opposed to beer?" A host of those kinds of
00112-10| things.
00112-11| And it appeared on them -- and they
00112-12| could parse the population into a number of groups
00112-13| based on these wants. And it appeared to us that
00112-14| statistically we could link these puffing behavior
00112-15| differences to some of these wants. And I can't
00112-16| remember exactly what it was that we looked at in
00112-17| this case.
00112-18| Q. Then directly under that under,
00112-19| "Implications," the first bullet point, you state,
00112-20| "Acceptability of products is related to cigarette
00112-21| smoke yields under actual smoking conditions and
00112-22| ultimately to the population of smokers tested."
00112-23| Now when you refer to smoke yields,
00112-24| would that include the nicotine level?
00112-25| A. I'm talking about yields of tar,

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00113-01| nicotine, and probably other smoke components.
00113-02| Q. Then the next bullet point you
00113-03| state, "Products which 'appeal' to smokers of one
00113-04| population are not smoked with the same strategies
00113-05| by smokers of another population. Thus, product
00113-06| acceptance may be improved by tailoring cigarettes
00113-07| to populations which use similar smoking
00113-08| strategies."
00113-09| What are some groups with similar
00113-10| smoking strategies, as you recall?
00113-11| MR. KREINER: Objection to the form.
00113-12| A. My recollection of that is that we
00113-13| were talking about being able to group smokers
00113-14| into statistically defined groups based on their
00113-15| smoking behavior, which would have been those puff
00113-16| parameters that we -- that I mentioned, volume,
00113-17| duration and frequency. And that different groups
00113-18| of people seemed to utilize different

00113-19 | constellations of those parameters.
00113-20 | I'm probably not being clear, I'm
00113-21 | sorry.
00113-22 | Q. When you are talking about groups,
00113-23 | what would be examples of these groups?
00113-24 | A. Can you statistically, if you have a
00113-25 | group of people and you measure something about --

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00114-01 | several things about each one of those
00114-02 | individuals, you can statistically lump the people
00114-03 | into groups based on the similarities of those
00114-04 | particular variables that you look at.
00114-05 | So if you look at any behavior or
00114-06 | anything that people do, it is possible to group
00114-07 | them into groups based on whatever it is you are
00114-08 | measuring.
00114-09 | So if I say this group tends to take
00114-10 | big puffs but little durations, or something like
00114-11 | that, it could be a different group of people that
00114-12 | took little puffs and big durations, or something.
00114-13 | Q. So what are some of the groups you
00114-14 | looked at, like men and women?
00114-15 | A. No. We're talking about -- well, I
00114-16 | don't know that there would be men and women both
00114-17 | in this experiment because frequently we used
00114-18 | sexually uniform groups. I think what we are
00114-19 | talking about here is the groups that we derived
00114-20 | from looking at their behaviors.
00114-21 | If I measured the behavior of
00114-22 | everybody in this room doing something, I can
00114-23 | probably find people that are doing something
00114-24 | quite different than the other people and I can
00114-25 | lump them into the groups based on that.

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00115-01 | Q. But when you state tailoring
00115-02 | cigarettes to population which use similar smoking
00115-03 | strategies, do these populations consist of
00115-04 | different groups out in the general population?
00115-05 | Like would you attempt to categorize people into
00115-06 | different populations?
00115-07 | MR. DAVIS: Objection.
00115-08 | MR. KREINER: Objection to the form.
00115-09 | A. As I recall this work, this
00115-10 | particular discussion that we're having here
00115-11 | relates to there would be several steps involved.
00115-12 | If I say I have looked at the laboratory -- and of
00115-13 | course we only use laboratory size samples of
00115-14 | people, which would be tens of people, maybe;
00115-15 | sometimes more than that. I have these groups of
00115-16 | individuals who utilize these particular smoking
00115-17 | strategies in terms of the description of their
00115-18 | puffing behavior. They also fit into these
00115-19 | quote -- you can't see that -- quote,
00115-20 | "demographic," unquote, groups that are derived by
00115-21 | other means, by asking them questions about what
00115-22 | they like or what they want or whatever.
00115-23 | Now if those are congruent that they
00115-24 | match up, then you can make the assumption -- and
00115-25 | it would only be an assumption -- that if I go

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00116-01 | into the general population and I measure
00116-02 | nonsmoking behaviors that are consistent with
00116-03 | these groups that they will retain these kinds of

00116-04 | puffing strategies. That's the assumption.
00116-05 | And that one could then say, "Okay,
00116-06 | if I'm going to design a cigarette that people who
00116-07 | use this puffing strategy like," then everything
00116-08 | in everybody in that group in the population we
00116-09 | have identified by using this other set of
00116-10 | variables will like those cigarettes better.
00116-11 | Q. So when you are talking about
00116-12 | demographic groups, could blue collar workers be a
00116-13 | demographic group?
00116-14 | A. That's a pretty broad demographic
00116-15 | group. I wouldn't, I wouldn't say that that would
00116-16 | be what we were talking about.
00116-17 | Q. How about, say, ironworkers, could
00116-18 | that be a demographic group?
00116-19 | MR. KREINER: Objection.
00116-20 | A. I would say in this case that would
00116-21 | not be a group we would be looking at. We would
00116-22 | be looking at demographic groups based on
00116-23 | something that would be somehow related to buying
00116-24 | products or liking certain kinds of lifestyles or
00116-25 | liking certain kinds of foods or drinks or

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00117-01 | whatever. Something that was relevant to the
00117-02 | likes of these people in terms of consumer
00117-03 | products, not where they worked.
00117-04 | Q. Do you think it would have any
00117-05 | relation or could it have any relation to
00117-06 | socioeconomic status?
00117-07 | MR. DAVIS: Objection.
00117-08 | MR. KREINER: Objection to the form.
00117-09 | A. To the extent that somebody in one
00117-10 | socioeconomic status or another would have a
00117-11 | particular want or, you know, in terms of what
00117-12 | they liked to eat, drink, look at, buy.
00117-13 | Q. Could it relates to cultural
00117-14 | differences?
00117-15 | MR. DAVIS: Objection.
00117-16 | A. We're sort of going into a general
00117-17 | area of speculation about which I don't have any
00117-18 | information, I don't know.
00117-19 | Q. Well, you said demographic groups; I
00117-20 | am just trying to get an understanding of the
00117-21 | different types of demographic groups.
00117-22 | A. You're asking me more than what -- I
00117-23 | think you, if you are asking me if we looked at a
00117-24 | lot of different demographic groups and they were
00117-25 | broke down specifically by their occupations and

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00118-01 | so forth, I don't think that we did. If we would
00118-02 | try to you identify people that had certain likes
00118-03 | or dislikes in terms of consumer products, then we
00118-04 | might have; or we might have done it the other way
00118-05 | around.
00118-06 | Once we had a group of people that
00118-07 | we had looked at in some way, like with smoking
00118-08 | behavior, we could then look to see, if we already
00118-09 | had data on, "Do you like fast cars, do you like
00118-10 | wine and beer," we could then say, "Well, did
00118-11 | their responses to questions of those things also
00118-12 | lump them into a group that is the same as this
00118-13 | group that we're looking at in terms of puffing
00118-14 | behavior?"

00118-15 | And according to this, it looked
00118-16 | like it may have happened. But it wouldn't have
00118-17 | been things like, I don't think, "Are you a well
00118-18 | digger or are you a college professor or are you a
00118-19 | whatever?"
00118-20 | Q. Could it have had to do with whether
00118-21 | are you a minority or not?
00118-22 | MR. KREINER: Objection to the form.
00118-23 | A. I don't recall that we did any work
00118-24 | in puffing behavior that had that particular
00118-25 | component in it.

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00119-01 | Q. But could the likes and wants of a
00119-02 | minority group be different from the rest of the
00119-03 | population at large?
00119-04 | A. I suppose.
00119-05 | MR. KREINER: Objection to form --
00119-06 | A. I'm not a demographer or a
00119-07 | biostatistician. I believe there could be.
00119-08 | Q. Could these demographic groups be
00119-09 | divided by age?
00119-10 | MR. KREINER: Objection.
00119-11 | MR. DAVIS: I'm really, are you just
00119-12 | asking him general questions now? I'm assuming
00119-13 | we're get into a lot of speculation and a lot of
00119-14 | could such-and-such?
00119-15 | MR. SAHAM: Again, I would say that
00119-16 | I think that's sort of an improper objection.
00119-17 | MR. DAVIS: You may think so, but I
00119-18 | think it's proper considering the way you're
00119-19 | asking the questions.
00119-20 | MR. SAHAM: Certainly, you have a
00119-21 | right to object to the form of the question.
00119-22 | MR. DAVIS: And I'm objecting to it
00119-23 | and I'm making my statement. I'm trying to find
00119-24 | out where you are going. There's a lot of "could
00119-25 | this, could that, could this?" What's that

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00120-01 | related to?
00120-02 | MR. SAHAM: Could you read back the
00120-03 | question, please.
00120-04 | (The reporter read back the pending
00120-05 | question.)
00120-06 | MR. DAVIS: My objection and
00120-07 | comments stand. Could you be more specific or do
00120-08 | you want to just leave it like that?
00120-09 | BY MR. SAHAM:
00120-10 | Q. Dr. Reynolds, could you answer the
00120-11 | question, please.
00120-12 | A. The, whenever we would do a smoking
00120-13 | behavior experiment, there would be certain
00120-14 | criteria that we would impose on the selection of
00120-15 | the group of individuals we were looking at, and
00120-16 | age was one of those criteria.
00120-17 | There would be -- and it was
00120-18 | frequently owing to whatever the, whatever the
00120-19 | purpose of the experiment was. If you wanted, you
00120-20 | know, but I wouldn't say that age was a
00120-21 | determining factor except as we wanted to know how
00120-22 | old the people were that we had in the groups and
00120-23 | how many were in each age group.
00120-24 | Q. But when you are saying that these
00120-25 | selections could be made or could differ from

00121-01 | demographic groups, could age level be one of the
 00121-02 | differences or be one of the groups by which
 00121-03 | these -- strike that.

00121-04 | Could age be one of the demographic
 00121-05 | groups you are referring to in distinguishing
 00121-06 | these characteristics?

00121-07 | MR. DAVIS: Objection.

00121-08 | MR. KREINER: Objection to the form.

00121-09 | A. The populations of individuals that
 00121-10 | we would recruit to be in the smoking behavior
 00121-11 | studies were recruited normally to fit within
 00121-12 | certain age criteria, usually pretty broad age
 00121-13 | criteria. So that it could have been possible to
 00121-14 | say, well, everybody from age 40 to 45 does X, and
 00121-15 | everybody from 45 to 50 does Y, but I don't recall
 00121-16 | that we did that.

00121-17 | Q. Well, I'm going back to your
 00121-18 | statement where you are saying, "Thus, product
 00121-19 | acceptance may be improved by tailoring cigarettes
 00121-20 | to populations which use similar smoking
 00121-21 | strategies."

00121-22 | Could smoking strategies vary by age
 00121-23 | of a population?

00121-24 | MR. KREINER: Objection to form.

00121-25 | A. I don't know that we ever -- I can't

00122-01 | recall work where we looked at the puffing
 00122-02 | behaviors and tried to relate that to age. We
 00122-03 | might have but I don't remember doing that.

00122-04 | Q. Do you recall any work with any
 00122-05 | minority subgroup on this issue?

00122-06 | MR. KREINER: Objection the form.

00122-07 | A. Would you --

00122-08 | Q. I guess a minority --

00122-09 | A. These days the term "minority" could
 00122-10 | mean a lot of things --

00122-11 | Q. Yeah, I'll be more specific --

00122-12 | A. -- what are you talking about?

00122-13 | Q. -- and say African, an African
 00122-14 | American population?

00122-15 | A. I don't recall that we ever did any
 00122-16 | work on an African American population that was
 00122-17 | somehow distinct from a non-African American
 00122-18 | population.

00122-19 | Q. But when you say, "Thus, product
 00122-20 | acceptance may be improved by tailoring cigarettes
 00122-21 | to populations which use similar smoking
 00122-22 | strategies," was it your understanding that or is
 00122-23 | it possible that -- strike that.

00122-24 | Was it your understanding that the
 00122-25 | African American population as a whole had similar

00123-01 | smoking strategies?

00123-02 | MR. KREINER: Objection to the form.

00123-03 | A. When I --

00123-04 | MR. DAVIS: Objection.

00123-05 | A. -- now when I'm talking about
 00123-06 | smoking strategies here, I'm talking about puffing
 00123-07 | behavior or the kind of things we measure in the
 00123-08 | laboratory.

00123-09 | As a practical matter, I think we
 00123-10 | actually looked at very few African Americans as

00123-11 | part of our subject populations in those studies;
00123-12 | so I don't know the answer to the question,
00123-13 | whether or not African Americans might have a
00123-14 | different smoking strategy than anybody else does.
00123-15 | Q. But in using the, in that sentence,
00123-16 | the term "tailoring cigarettes to populations," is
00123-17 | it possible that African Americans could be one of
00123-18 | the populations you are speaking of?
00123-19 | MR. KREINER: Objection to the form.
00123-20 | Asked and answered.
00123-21 | MR. DAVIS: Objection.
00123-22 | A. My recollection, when I wrote this I
00123-23 | was talking about smoking strategies that we had
00123-24 | identified and had linked to smoker wants by these
00123-25 | statistical measures. And as I pointed out, we

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00124-01 | didn't make any measurements of smoking behavior
00124-02 | except in very rare instances on the African
00124-03 | Americans so I don't know the answer to the
00124-04 | question.
00124-05 | MR. SAHAM: Is now a good time for a
00124-06 | lunch break?
00124-07 | MR. KREINER: Suits me.
00124-08 | MR. DAVIS: Fine with me.
00124-09 | THE WITNESS: That's fine.
00124-10 | THE VIDEOGRAPHER: Off the record at
00124-11 | 12:19.
00124-12 | (The luncheon recess was taken
00124-13 | at 12:19 P.M.)

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00125-01 | APPEARANCES OF COUNSEL:
00125-02 | (P.M. SESSION)
00125-03 | SCOTT H. SAHAM, ESQ.
00125-04 | CHRISTOPHER A. KREINER, ESQ.
00125-05 | WILLIAM K. DAVIS, ESQ.
00125-06 | ALSO PRESENT:
00125-07 | RALEIGH ELLISON, VIDEOGRAPHER
00125-08 | REPORTED BY:
00125-09 | SYDNEY C. SILVA, REGISTERED
00125-10 | PROFESSIONAL REPORTER AND NOTARY PUBLIC

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00126-01 | (The deposition of JOHN H. REYNOLDS,
00126-02 | IV was reconvened at 1:23 P.M.)
00126-03 | JOHN H. REYNOLDS, IV,
00126-04 | having been previously duly sworn, testified
00126-05 | further as follows:
00126-06 | THE VIDEOGRAPHER: Back on the
00126-07 | record at 1:23.
00126-08 | MR. SAHAM: If you will please mark
00126-09 | this as Exhibit 8.
00126-10 | (Deposition Exhibit No. 8 was
00126-11 | marked for identification and is
00126-12 | bound separately.)
00126-13 | EXAMINATION (CONTINUING)
00126-14 | BY MR. SAHAM:
00126-15 | Q. Dr. Reynolds, could you please take
00126-16 | a look at what has been marked as Exhibit 8. For
00126-17 | the record, this is a memorandum from J. H.
00126-18 | Reynolds to Dr. A. W. Hayes, it's dated 9/28/90,
00126-19 | and it bears on the side Bates stamp 50804 1138
00126-20 | through 39.
00126-21 | A. (Witness peruses document.)

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00127-01 | Q. Dr. Reynolds, do you recognize this
00127-02 | document?
00127-03 | A. Yes.
00127-04 | Q. And is this a document that you
00127-05 | authored in September of 1990?
00127-06 | A. I believe that it is.
00127-07 | Q. And you authored this during the
00127-08 | ordinary course of business of your employment
00127-09 | with R.J. Reynolds?
00127-10 | A. Yes.
00127-11 | Q. I would like to refer your attention
00127-12 | to the second paragraph of this document where it
00127-13 | says, "GRD. 2. Obtain a better understanding of
00127-14 | the role of nicotine in smoking enjoyment leading
00127-15 | to positive product advantages in current products
00127-16 | and/or identification of new product
00127-17 | opportunities."
00127-18 | Does this memorandum describe
00127-19 | research that you conducted with the goal of
00127-20 | obtaining a better understanding of the role of
00127-21 | nicotine in smoking enjoyment?
00127-22 | A. I believe that that paragraph it
00127-23 | says, "GRD. 2. Obtain a better understanding," et
00127-24 | cetera, that that is a excerpt from Dr. DiMarco's
00127-25 | PR1, which was a performance plan for Dr. DiMarco.

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00128-01 | And this document that follows that is a
00128-02 | compilation of results that we had obtained that
00128-03 | might speak to his accomplishment there of his PR1
00128-04 | objective.
00128-05 | Q. So was the objective of
00128-06 | Dr. DiMarco's research to obtain a better
00128-07 | understanding of the role of nicotine in smoking
00128-08 | enjoyment?
00128-09 | MR. KREINER: Objection to the form.
00128-10 | A. Dr. DiMarco's PR1, which was a,
00128-11 | basically a document everyone had to produce;
00128-12 | everyone in the department had a PR1 that said you
00128-13 | are going to do this, this is what you are going
00128-14 | to do this year. And evidently his PR1 included
00128-15 | the statement that he was going to be responsible
00128-16 | for seeing that this happened.
00128-17 | Now he wouldn't have actually done
00128-18 | the research. He was the vice president in charge
00128-19 | of Research and Development; so those of us who
00128-20 | reported to him and were doing research that might
00128-21 | be relevant to that PR1 had to tell him what it
00128-22 | was we did so he could go back and say, "Here's
00128-23 | what I did on my, to further my PR1."
00128-24 | Q. So, so PR1 was specific to each
00128-25 | individual, not every individual research product?

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00129-01 | A. Right. Normally, it was -- and not
00129-02 | every individual, but usually just management type
00129-03 | people would have a PR1. And some, some
00129-04 | researchers would have that. Not everyone had
00129-05 | one.
00129-06 | Q. And what was Dr. DiMarco's position
00129-07 | at this time?
00129-08 | A. He was vice president of Research
00129-09 | and Development.
00129-10 | Q. And one, one of his goals then for
00129-11 | the period referenced in this memo was to obtain a

00129-12| better understanding of the role of nicotine in
00129-13| smoking enjoyment; is that correct?
00129-14| MR. KREINER: Objection to the form,
00129-15| asked and answered.
00129-16| A. If this is an accurate
00129-17| representation of what was in his PR1, that's
00129-18| correct.
00129-19| Q. And at the end of that sentence we
00129-20| just referenced are referenced in parens it says,
00129-21| "(e.g, XGT)."
00129-22| A. Right.
00129-23| Q. What does the XGT reference?
00129-24| A. That was a code name for a project.
00129-25| Q. And does XGT refer to a particular
----- PAGE00130 -----
00130-01| type of cigarette or a research project?
00130-02| A. Well, it was sort of both.
00130-03| Q. Is XGT a low tar/low nicotine
00130-04| cigarette?
00130-05| A. I don't remember what XGT was.
00130-06| There were -- and I'm not trying to be flippant.
00130-07| There were, there were a lot of these acronyms --
00130-08| not really acronyms, they are just code letters
00130-09| put together and they would change them every
00130-10| year.
00130-11| So XGT was a, it was a project
00130-12| called XGT. It may have had to do with a
00130-13| particular kind of cigarette; and I don't exactly
00130-14| remember which particular one it had to do with,
00130-15| but that's what it would have been. Both a
00130-16| prototype or experimental type cigarette and the
00130-17| project that was ongoing to support its, the
00130-18| researching and development that were done in
00130-19| support of realizing it.
00130-20| Q. Do you agree that nicotine plays a
00130-21| role in smoking enjoyment?
00130-22| A. Yes.
00130-23| Q. Do you agree that nicotine plays a
00130-24| role in smoking satisfaction?
00130-25| A. Insofar as we use the word
----- PAGE00131 -----
00131-01| "satisfaction," yes, it does.
00131-02| Q. What is your understanding of the
00131-03| phrase "nicotine transfer"?
00131-04| A. When I think of nicotine transfer, I
00131-05| think of the nicotine is contained within tobacco
00131-06| as nicotine and then, when it is transferred, it
00131-07| gets into the smoke as opposed to being in the
00131-08| tobacco itself.
00131-09| Q. And then the smoke is generally
00131-10| would then be inhaled?
00131-11| A. Some of it is inhaled.
00131-12| Q. What does "WTPM" stand for?
00131-13| A. That stands for "wet total
00131-14| particulate matter."
00131-15| Q. And what does that mean?
00131-16| A. Cigarette smoke is composed of two
00131-17| distinct phases of matter, one of which is liquid
00131-18| or semisolid, the other is gas. The liquid or
00131-19| semisolid occurs in droplets that can be filtered
00131-20| by a particular kind of glass filter mat that's
00131-21| used in the FTC procedure.
00131-22| The material that is trapped on the,

00131-23| on that glass filter pad during a prescribed kind
00131-24| of smoking procedure is called total particulate
00131-25| matter, or TPM. And in the course of a lot of

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00132-01| chemical analyses of it, it can be dried. The
00132-02| material that's there before it is dried is called
00132-03| wet total particulate matter because it has a lot
00132-04| of water in it.

00132-05| Q. And how is that measured?

00132-06| A. The way that it is measured it is
00132-07| essentially the same as the FTC tar procedure, if
00132-08| you are at all familiar with that.

00132-09| It is a prescribed number of
00132-10| cigarettes are humidified for a certain prescribed
00132-11| length of time in a humidity controlled
00132-12| environment. Then those cigarettes are smoked on
00132-13| a smoking machine in a prescribed fashion through
00132-14| a cigarette holder that contains within it one of
00132-15| these glass filter mats. And the material, the
00132-16| glass filter mat is weighed prior to the smoking
00132-17| of the prescribed number of cigarettes through it.
00132-18| Then when the cigarettes are all smoked it is
00132-19| weighed again and that, the difference in those
00132-20| weights, is called the WTPM or wet total
00132-21| particulate matter.

00132-22| Q. So it's a measure, in short, it is a
00132-23| measure of are the tar to some degree?

00132-24| MR. DAVIS: Objection.

00132-25| A. It's a measure -- well, "tar" is a

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00133-01| real kind of a catchall term for some of the
00133-02| materials that are contained within wet TPMPM.
00133-03| Because there is a significant water faction in
00133-04| wet TPM that's not in quote, "tar," unquote.

00133-05| Q. What was Project Chelsea?

00133-06| A. Chelsea was actually the name of a
00133-07| cigarette brand. And as I recall, Chelsea had a,
00133-08| it had a material on the paper that released a, an
00133-09| odorant into the air when it was burned.

00133-10| Q. Was that ever commercialized?

00133-11| A. Yes, uh-huh.

00133-12| Q. So could you go out and buy a
00133-13| Chelsea brand cigarette or was Chelsea
00133-14| incorporated into other products?

00133-15| A. In certain areas. I'm not sure that
00133-16| it was in national distribution; I know it was at
00133-17| least in test markets. And I don't recall where;
00133-18| but yeah, in the test markets at any rate, you
00133-19| could go buy a Chelsea cigarette.

00133-20| Q. Was Chelsea a low tar/nicotine
00133-21| product?

00133-22| A. There may have been more than one
00133-23| version. I don't recall whether it was just low
00133-24| tar and nicotine or whether there were several
00133-25| kinds.

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00134-01| Q. I would like to draw your attention
00134-02| to the middle of this document which has been
00134-03| marked as Exhibit 8, where you state, "'Merit
00134-04| Free' study run in '89, data analyzed in 1990:
00134-05| showed smoking Merit Free raised plasma nicotine
00134-06| by less than 2 mg/ml. No effects on brain waves
00134-07| seen. In contrast, smoking of Merit 85 raised

00134-08 | plasma nicotine least 15 mg/ml; brain wave effects
00134-09 | were noted."

00134-10 | What sort of brain wave effects are
00134-11 | you speaking of?

00134-12 | MR. KREINER: Objection to the form.

00134-13 | A. Well, first it says, "Merit 85
00134-14 | raised plasma nicotine by at least," okay? So you
00134-15 | left out a couple words there, it says, "by at
00134-16 | least 15 nanograms per mill."

00134-17 | And the question was, what kind of
00134-18 | brain waves effects were noted? Is that your
00134-19 | question.

00134-20 | Q. That's my question, yes.

00134-21 | A. There's a lot of brain wave effects
00134-22 | that you can measure while people are smoking
00134-23 | cigarettes; and it is not just one kind, but
00134-24 | there's a whole compilation of things that you can
00134-25 | look at.

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00135-01 | And in this case what we are saying
00135-02 | is we didn't particularly see any of these things
00135-03 | when the persons smoked Merit Free and we did see
00135-04 | them when they smoked Merit 85.

00135-05 | Q. And what's the difference between
00135-06 | Merit Free and Merit 85?

00135-07 | A. Both of those products are Philip
00135-08 | Morris or were Philip Morris commercial brands.

00135-09 | Merit Free had tobacco in it that
00135-10 | had apparently was either very low in nicotine
00135-11 | owing to cultural and -- I mean agricultural and
00135-12 | climate effects and/or had been denicotinized so
00135-13 | that there was really very little nicotine yielded
00135-14 | by that cigarette. Merit 85 was an ordinary
00135-15 | cigarette.

00135-16 | Q. So the low or no nicotine cigarette
00135-17 | did not induce brain wave effects whereas the
00135-18 | regular nicotine cigarette did result in brain
00135-19 | wave effects?

00135-20 | MR. KREINER: Objection to the form.

00135-21 | A. What it says is when the individual
00135-22 | smoked the products there was a difference in what
00135-23 | we observed in going on with their brain waves.
00135-24 | And we didn't see the effects in the case of the
00135-25 | people that were smoking the Merit Free and we did

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00136-01 | see them when they smoked the Merit 85.

00136-02 | Q. So this would be additional evidence
00136-03 | that nicotine does have physiological effects; is
00136-04 | that correct?

00136-05 | MR. KREINER: Objection to the form.

00136-06 | A. Well, the presumption would be, I
00136-07 | suppose, that. What we have, what we can say is
00136-08 | two simultaneously -- two simultaneous effects are
00136-09 | observed. And that is, when you smoke a, when
00136-10 | these people smoked Merit Free their plasma
00136-11 | nicotine levels went up by less than two nanograms
00136-12 | per milliliter and they didn't show any brain wave
00136-13 | effects; and when they did smoke the product,
00136-14 | their plasma levels went up by 15 nanograms per
00136-15 | mill and the brain wave effects were noted.

00136-16 | Q. I would like to draw your attention
00136-17 | to the next page of Exhibit 8 in the middle of the
00136-18 | page where you state, "Funded study at Florida

00136-19| State University showed permeability of tongue
00136-20| epidermis to nicotine affected by composition of
00136-21| solution. Work being extended to other
00136-22| better-tasting substances in investigation of
00136-23| after taste mechanisms."
00136-24| Who was this research funded by?
00136-25| MR. KREINER: Objection to the form.

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00137-01| A. First of all, it doesn't say,
00137-02| "better-tasting substances," it says,
00137-03| "bitter-tasting substances."
00137-04| Q. Oh, I, I apologize.
00137-05| A. R.J. Reynolds was funding this work.
00137-06| Q. Was R.J. Reynolds directly funding
00137-07| it or is it being funded by -- strike that.
00137-08| Are you familiar with the Council
00137-09| for Tobacco Research?
00137-10| A. I have heard of it.
00137-11| Q. Was this research funded directly by
00137-12| R.J. Reynolds?
00137-13| A. Yes, it was.
00137-14| Q. And you would distinguish that
00137-15| funding mechanism from research funded by the
00137-16| Council for Tobacco Research?
00137-17| A. I don't know what the funding
00137-18| mechanism for the CTR was. I know that this was
00137-19| funded by R.J. Reynolds.
00137-20| Q. Did you ever do any research at R.J.
00137-21| Reynolds regarding non-smoke nicotine products?
00137-22| MR. KREINER: Objection to the form.
00137-23| A. Non-smoke nicotine products? Such
00137-24| as?
00137-25| Q. Something that you wouldn't have to

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00138-01| burn or heat to, to ingest nicotine.
00138-02| MR. KREINER: Objection to the form.
00138-03| A. You mean like chewing tobacco, for
00138-04| example, something like that?
00138-05| Q. Yeah, chewing tobacco would be an
00138-06| example; gum would be an example, just to give you
00138-07| a couple. Any product other than a conventional
00138-08| cigarette or the Premier product that we talked
00138-09| about earlier that would result in yielding
00138-10| nicotine to the user of the product.
00138-11| A. I cannot recall personally doing any
00138-12| work on chewing tobacco. I, and I don't think
00138-13| that I did any work on nicotine gum. Didn't do
00138-14| any work on nicotine patches that I know of, you
00138-15| know, the transdermal, Nicoderm is what they call
00138-16| them.
00138-17| I don't remember whether we did any
00138-18| work with the Favor product or not. I kind of
00138-19| think that we didn't; somebody looked at it, but I
00138-20| don't think that we did.
00138-21| I just don't remember any others.
00138-22| Q. What's the Favor product?
00138-23| A. Favor was a product that was put on
00138-24| the market by some company, I don't know who it
00138-25| was, as a matter of fact. It was basically a

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00139-01| piece of, a very long piece of cigarette filter
00139-02| that had some kind of nicotine solution in it; and
00139-03| the idea was you just sucked on that and you got

00139-04| nicotine in your mouth from that.
00139-05| It was not an RJR product and it is
00139-06| no longer on the market.
00139-07| Q. And you're not aware of any Reynolds
00139-08| research relating to that product?
00139-09| A. I mean, it was, it was a commercial
00139-10| product, I'm sure somebody brought it in-house and
00139-11| looked at it. I don't know what they did. I
00139-12| don't recall that we did anything in my area with
00139-13| it.
00139-14| Q. Why do you think someone looked at
00139-15| it?
00139-16| A. Well, it was a commercial product,
00139-17| and we looked at everybody's, it was a smoking
00139-18| product, quote/unquote, "smoking product." So we
00139-19| looked at the marketplace a lot and things came in
00139-20| the door all the time.
00139-21| Q. And you would consider it a smoking
00139-22| product even though it wasn't lit?
00139-23| A. Well, it was a product designed for
00139-24| people to use like a cigarette, it was in a pack
00139-25| and you unwrapped it and you sucked on it.

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00140-01| Q. And it was a product that would
00140-02| deliver nicotine to the user?
00140-03| A. It would indeed, as far as we know.
00140-04| Now we had, as far as I don't think we measured
00140-05| any puffing behavior on it and I don't think we
00140-06| measured any plasma nicotine.
00140-07| Q. I would like to draw your attention
00140-08| to the second-to-the-last paragraph of Exhibit 8,
00140-09| where you state, "Extramural studies at U.S. and
00140-10| U.K. universities showed the following: nicotine
00140-11| evokes release of corticosterone in mice -
00140-12| possibly related to stress in smokers - and effect
00140-13| is genetically-linked; direct positive effects of
00140-14| nicotine on attention and memory in humans with
00140-15| Alzheimers disease and in rat model demonstrated;
00140-16| some nicotine salts more potent than nicotine in
00140-17| invoking release of neurotransmitters in in-vitro
00140-18| sites."
00140-19| A. "Tests."
00140-20| Q. "Tests." Tests, I'm sorry. I can't
00140-21| read very well.
00140-22| Now did you do any research at
00140-23| Reynolds regarding the effect of nicotine on
00140-24| memory?
00140-25| MR. KREINER: Objection to the form.

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00141-01| A. We, in some of our behavioral work,
00141-02| it is possible we used some kinds of memory tests.
00141-03| I don't recall. We used a number of psychological
00141-04| tests to study smokers; some may have been memory
00141-05| tests. This isn't talking about our work.
00141-06| Q. Do you know what this is discussing?
00141-07| A. Yes, in general, I do.
00141-08| Q. Could you briefly describe that?
00141-09| A. Yes. We funded a number of projects
00141-10| at academic institutions in the United States and
00141-11| in the United Kingdom to look at a lot of
00141-12| different things, and this is talking about some
00141-13| of the results that were obtained at those places.
00141-14| Q. Has anyone to your knowledge used

00141-15| nicotine or any nicotine-related product to treat
00141-16| Alzheimers disease?
00141-17| A. I believe that that at the, at the
00141-18| University of London that that was being looked
00141-19| at, yes.
00141-20| Q. Draw your attention to the last
00141-21| paragraph of Exhibit 8 where you state, "Important
00141-22| evidence of existence in human urine of
00141-23| glucuronides of nicotine cotinine and nicotine
00141-24| metabolites found. Potential for effects on
00141-25| estimation of non-smoker exposure to ETS.

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00142-01| Now "ETS," does is that stand for
00142-02| "environmental tobacco smoke"?
00142-03| A. Yes.
00142-04| Q. Is was this looking at a way where
00142-05| you could determine levels of exposures to
00142-06| non-smokers to ETS?
00142-07| MR. KREINER: Objection to the form.
00142-08| A. This particular work here is talking
00142-09| about looking at ways to estimate, yes, the short
00142-10| answer is yeah, we were looking -- not my unit but
00142-11| another unit was looking at ways to estimate
00142-12| exposures to ETS in smokers and non-smokers. And
00142-13| one of the ways that this could, was thought to be
00142-14| possible was to look at nicotine in smokers' urine
00142-15| or I mean in the individuals who were exposed to
00142-16| smoke's urine.
00142-17| Why this is important is because if
00142-18| you just look at nicotine, you don't see
00142-19| everything because it's metabolized and it's bound
00142-20| up in these glucuronides and so forth. And so if
00142-21| you want to know the complete mass balance you
00142-22| have got to look at all the, all the different
00142-23| ways that nicotine and its metabolites show up in
00142-24| urine.
00142-25| Q. Do you know if this procedure was

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00143-01| perfected?
00143-02| MR. KREINER: Objection to form.
00143-03| A. Well, a whole lot of researching was
00143-04| done on it. Now perfected, I don't know; but a
00143-05| lot of work was done on identifying these
00143-06| metabolites and glucuronides.
00143-07| Q. And to your knowledge were levels of
00143-08| these compounds found in non-smokers as well as
00143-09| smokers, non-smokers exposed to ETS as well as
00143-10| non-smokers?
00143-11| MR. KREINER: Objection to the form.
00143-12| MR. SAHAM: Strike that, I think I
00143-13| misstated that.
00143-14| BY MR. SAHAM:
00143-15| Q. Was this procedure used to -- strike
00143-16| that.
00143-17| Through the use of this procedure,
00143-18| are you aware of any research which found these
00143-19| compounds in non-smokers who were exposed to ETS?
00143-20| MR. KREINER: Objection to the form.
00143-21| A. I know there was a lot of work being
00143-22| done in the ETS division that was both done here
00143-23| in the U.S. and on -- they didn't do it but they
00143-24| helped run it -- in foreign countries to look at
00143-25| smokers and non-smokers exposed to ETS. And as

00144-01 | far as I know, some of these procedures were used
 00144-02 | on urine samples from those areas, and I just
 00144-03 | can't remember exactly what was done.
 00144-04 | Q. Are you aware whether they were able
 00144-05 | to detect these substances in the urine of
 00144-06 | non-smokers exposed to ETS?
 00144-07 | A. I believe they --
 00144-08 | MR. KREINER: Objection to the form.
 00144-09 | A. I'm sorry. I believe they could
 00144-10 | detect nicotine. I'm not sure that they could
 00144-11 | detect all the other things.
 00144-12 | Q. But you do believe they were able to
 00144-13 | detect nicotine?
 00144-14 | A. In some cases I believe they were,
 00144-15 | yes.
 00144-16 | MR. SAHAM: Could we mark this as
 00144-17 | Exhibit 9, please.
 00144-18 | (Deposition Exhibit No. 9 was
 00144-19 | marked for identification and is
 00144-20 | bound separately.)
 00144-21 | BY MR. SAHAM:
 00144-22 | Q. Dr. Reynolds, would you please take a
 00144-23 | look at what has been marked as Exhibit 9. For
 00144-24 | the record, an interoffice memo from J. H.
 00144-25 | Reynolds to Dr. Alan Rodgman dated June 8, 1982.

00145-01 | And it bears the side Bates stamp 50283 8981.
 00145-02 | A. (Witness peruses document.)
 00145-03 | Q. Dr. Reynolds, is this a document
 00145-04 | that you drafted during your course of employment
 00145-05 | at, at Reynolds in June of 1982?
 00145-06 | A. I believe that it is.
 00145-07 | Q. And is that your signature at the
 00145-08 | bottom of the document?
 00145-09 | A. Yes.
 00145-10 | Q. And this document was prepared in
 00145-11 | the ordinary course of your employment?
 00145-12 | A. Yes.
 00145-13 | Q. And the subject of this document is
 00145-14 | a proposal of Dr. Robert E. Shipley?
 00145-15 | A. Yes.
 00145-16 | Q. What was that proposal?
 00145-17 | A. As far as I can recall, it is what
 00145-18 | it says here in the first paragraph, that he -- I
 00145-19 | don't remember this guy at all, to tell you the
 00145-20 | truth -- he, he was, like a number of other
 00145-21 | people, interested in getting the tobacco company
 00145-22 | to pay for either a invention or research program
 00145-23 | that he wanted to run. And apparently he wrote in
 00145-24 | and said, "I've discovered this thing and I want
 00145-25 | you to give me some money to study it."

00146-01 | Q. And it seems what he was claiming to
 00146-02 | have discovered is something that Reynolds was
 00146-03 | already aware of; is that correct?
 00146-04 | MR. KREINER: Objection to the form.
 00146-05 | A. According to my reply in the second
 00146-06 | paragraph, he, he claimed to have made this
 00146-07 | wonderful observation and that we ought to be
 00146-08 | interested in the T/N ratios, the tar/nicotine
 00146-09 | ratios is what I mean by T/N ratios.
 00146-10 | And what I'm saying is that the T/N

00146-11 | ratio had been recognized as possibility being
00146-12 | important to acceptability for a long time; that
00146-13 | the idea of altering that was not a new idea; and
00146-14 | that we had some work ongoing to look at aspects
00146-15 | of that. So we didn't feel like we needed to pay
00146-16 | him to do what was already, A, known, or, B, being
00146-17 | worked on.

00146-18 | Q. Specifically, your response was that
00146-19 | the idea of increasing the nicotine level in low
00146-20 | tar products is not new; is that correct?

00146-21 | A. That's correct.

00146-22 | Q. And furthermore, that Reynolds had
00146-23 | already recognized the connection between nicotine
00146-24 | and satisfaction and had been pursuing this
00146-25 | connection for some time; is that correct?

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00147-01 | MR. KREINER: Objection to the form.

00147-02 | A. I believe what it says is --

00147-03 | Q. And I draw your attention
00147-04 | specifically to the third paragraph --

00147-05 | A. Yeah.

00147-06 | Q. -- where you state, "I feel that we
00147-07 | should politely decline --"

00147-08 | A. Right.

00147-09 | Q. "-- Dr. Shipley's offer and perhaps
00147-10 | indicate that we have recognized the connection
00147-11 | between nicotine and satisfaction --"

00147-12 | A. Right.

00147-13 | Q. "-- and have been pursuing it for
00147-14 | some time."

00147-15 | A. Right.

00147-16 | Q. Do you believe that statement to be
00147-17 | correct?

00147-18 | A. That we had recognized there was a
00147-19 | connection between nicotine and satisfaction?
00147-20 | Yes.

00147-21 | Q. And that Reynolds had been pursuing
00147-22 | that connection for some time?

00147-23 | A. Yes.

00147-24 | MR. SAHAM: Could we mark this as
00147-25 | Exhibits 10, please.

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00148-01 | (Deposition Exhibit No. 10
00148-02 | was marked for identification and
00148-03 | is bound separately.)

00148-04 | A. (Witness peruses document.)

00148-05 | Q. For the record, Exhibit 10 is a
00148-06 | interoffice memorandum from J. H. Reynolds to
00148-07 | Dr. Alan Rodgman dated appears to be July 25,
00148-08 | 1983. And the side Bates number is somewhat
00148-09 | unlegible but the bottom Bates number is
00148-10 | RJM025806.

00148-11 | A. Uh-huh.

00148-12 | Q. Do you recognize this document,
00148-13 | Dr. Reynolds?

00148-14 | A. Yes.

00148-15 | Q. Is this a document you drafted in
00148-16 | your regular course of employment at Reynolds in
00148-17 | 1983?

00148-18 | A. Yes.

00148-19 | Q. Is that your signature at the bottom
00148-20 | of the document?

00148-21 | A. Yes, it is.

00148-22| Q. And the subject is, "Benewitz, et
00148-23| al., 'Smokers of Low Yield Cigarettes Do Not
00148-24| Consume Less Nicotine."
00148-25| A. Uh-huh.

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00149-01| Q. And is -- did you agree with that
00149-02| statement --
00149-03| MR. KREINER: Objection to the form.
00149-04| Q. -- that smokers of cigarettes do not
00149-05| consume less nicotine?
00149-06| A. Well, that's the --
00149-07| MR. KREINER: Objection to the form.
00149-08| A. That's the title of this paper.
00149-09| Q. And you analyzed Dr. or
00149-10| Mr. Benewitz' paper?
00149-11| MR. KREINER: Objection to form.
00149-12| A. I read Dr. Benewitz's paper and
00149-13| provided this commentary to Dr. Rodgman.
00149-14| Q. And did you agree with
00149-15| Dr. Benewitz's conclusions?
00149-16| MR. KREINER: Objection to form.
00149-17| A. Not all of them.
00149-18| Q. I would like to draw your attention
00149-19| to the second part of the first paragraph where
00149-20| you state, "The tendency is for smokers to
00149-21| increase puff volume, increase numbers of puffs
00149-22| and to take more puffs per unit time as cigarettes
00149-23| trend downward in," and then there's a word that
00149-24| can't be read or is difficult to read, "tar. Such
00149-25| behavioral modifications would be expected to

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00150-01| increase the smoke yields. There's no question
00150-02| that the behavior of the smoker is a major factor
00150-03| in determining the yield of smoke from any
00150-04| cigarette."
00150-05| Do you agree with that statement?
00150-06| A. True.
00150-07| MR. KREINER: Objection to the form.
00150-08| A. I agree.
00150-09| Q. So it's possible then an individual
00150-10| smoking a low tar/low nicotine cigarette will
00150-11| increase puff volume and puff frequency in order
00150-12| to obtain the same amount of nicotine that that
00150-13| smoker would obtain from a regular cigarette?
00150-14| MR. KREINER: Objection to the form,
00150-15| asked and answered.
00150-16| A. That doesn't say this -- this
00150-17| doesn't say that. This says that, that the
00150-18| behavior of the smoker is a major factor in
00150-19| determining the yield of smoke from any cigarette
00150-20| owing to their modification of smoking behavior.
00150-21| It doesn't say that they do it in accordance to
00150-22| increase their intake of nicotine.
00150-23| Q. But it is possible that a smoker
00150-24| smoking a low tar/low nicotine cigarette would
00150-25| increase the number and volume of puffs in a

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00151-01| manner which would result in that smoker obtaining
00151-02| the same amount of nicotine he or she would have
00151-03| otherwise obtained from a standard nicotine/tar
00151-04| cigarette?
00151-05| MR. DAVIS: Objection.
00151-06| MR. KREINER: Objection to the form,

00151-07 | calls for speculation.
00151-08 | A. As I pointed out before, smoking
00151-09 | behavior is a pretty individualistic act. And if
00151-10 | you look at how an individual puffs a cigarette,
00151-11 | that's going to be an effect on the amount of
00151-12 | smoke that comes out of the back end of the
00151-13 | cigarette.
00151-14 | Now the individual can inhale that
00151-15 | smoke or not; and all those kinds of behaviors are
00151-16 | going to influence how much tar and nicotine they
00151-17 | actually get exposed to.
00151-18 | Q. But reducing the amount of tar and
00151-19 | nicotine in a cigarette does not necessarily
00151-20 | reduce the amount of tar and nicotine consumed by
00151-21 | a smoker; is that correct?
00151-22 | MR. KREINER: Objection to the form.
00151-23 | A. For any individual smoker who smokes
00151-24 | a cigarette in whatever way, that's true.
00151-25 | MR. SAHAM: Could we mark this as

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00152-01 | Exhibit 11, please.
00152-02 | (Deposition Exhibit No. 11
00152-03 | was marked for identification and
00152-04 | is bound separately.)
00152-05 | Q. Dr. Reynolds, would you please take
00152-06 | a look at what has been marked as Exhibit 11.
00152-07 | This is an RJR interoffice memorandum to Dr. G. R.
00152-08 | DiMarco from Watson M. Dufour dated July 9, 1992,
00152-09 | and it bears Bates numbers 50804 1607 through
00152-10 | 1609.
00152-11 | A. (Witness peruses document.)
00152-12 | Q. Dr. Reynolds, do you remember
00152-13 | attending a meeting June 8, 1992, regarding XB at
00152-14 | Tanglewood Manor House?
00152-15 | A. I think that I did.
00152-16 | Q. Do you ever remember seeing this
00152-17 | document before?
00152-18 | A. I don't remember this specific
00152-19 | document, but I was a meeting attendee so I
00152-20 | presume I got a copy.
00152-21 | Q. You have nothing to lead you to
00152-22 | believe you didn't receive --
00152-23 | A. That's true.
00152-24 | Q. -- a copy of this document?
00152-25 | A. Well -- no, I don't have anything

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00153-01 | that would lead me to believe I didn't see it.
00153-02 | Q. May I draw your attention to the
00153-03 | bullet point at the bottom of the first page and
00153-04 | then the next two bullet points going on the
00153-05 | second page, where it states, "John Reynolds
00153-06 | reviewed the results of blood nicotine studies on
00153-07 | XB and XGT products."
00153-08 | A. Uh-huh.
00153-09 | Q. Now do you remember, I think we
00153-10 | discussed the XGT product earlier. Do you
00153-11 | remember what the XB product was?
00153-12 | A. Yes.
00153-13 | Q. What was that?
00153-14 | A. There had been a suggestion by
00153-15 | Dr. Mike Russell, who I believe was at the
00153-16 | University of London. And his suggestion was that
00153-17 | nicotine yields should be increased in cigarettes.

00153-18| And he was, he was a major smoking and health
00153-19| researcher; and his premise was that if you gave
00153-20| people more nicotine, they would smoke less
00153-21| cigarettes. And XB was an experimental program to
00153-22| determine whether one could actually do that in
00153-23| case there was in fact some kind of benefit from
00153-24| it.

00153-25| Q. So XB was a high nicotine cigarette?

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00154-01| A. It was a --

00154-02| MR. KREINER: Objection to form.

00154-03| A. -- XB was a project to try to
00154-04| develop several different kinds of cigarettes that
00154-05| had low nicotine-to-tar -- low tar-to-nicotine
00154-06| ratios.

00154-07| Q. And what is levulinic acid?

00154-08| A. Levulinic acid. Levulinic acid is a
00154-09| naturally-occurring organic compound.

00154-10| Q. How is levulinic acid related to the
00154-11| XB product?

00154-12| MR. KREINER: Objection to form.

00154-13| A. Levulinic acid had been known for a
00154-14| long time as a, quote, "smoothing agent," unquote,
00154-15| and it was able to make cigarette smoke feel
00154-16| smoother in the mouth. And it also didn't taste
00154-17| particularly -- it didn't have a particularly bad
00154-18| taste in and of itself, and so it was used as a
00154-19| smoothing agent in these products where the T/N
00154-20| ratio had been altered.

00154-21| Q. Would levulinic acid have an affect
00154-22| on the blood nicotine content of the smoker?

00154-23| MR. KREINER: Objection to form.

00154-24| A. It wouldn't in and of itself have
00154-25| that effect.

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00155-01| Q. In interacting with other compounds,
00155-02| would it?

00155-03| MR. KREINER: Objection to form.

00155-04| A. As I pointed out, it was used as a
00155-05| smoothing agent; that is, so that cigarettes that
00155-06| would normally be perceived as very harsh would
00155-07| not be perceived as harsh. And a product that had
00155-08| a low T/N ratio would ordinarily be perceived as
00155-09| very harsh, so levulinic acid could mask that
00155-10| harshness or improve that harshness so that one
00155-11| could actually smoke those products.

00155-12| Q. So would levulinic acid have any
00155-13| effect when put into the mixture of those
00155-14| compounds as to the net absorption of nicotine by
00155-15| the smoker?

00155-16| MR. KREINER: Objection to the form.

00155-17| A. It would not affect the absorption
00155-18| in and of itself.

00155-19| Q. Interacting with -- the interactions
00155-20| of levulinic acid with other compounds, would that
00155-21| affect that absorption?

00155-22| MR. KREINER: Objection to form.

00155-23| A. Presumably, it, as I say, it
00155-24| affected this harshness property that was normally
00155-25| associated with nicotine. If you have an

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00156-01| extremely harsh product, people won't smoke them;
00156-02| so if it is there and it makes the smoke smooth,

00156-03| they will smoke them. So that extent, yeah, it
00156-04| could affect the amount of nicotine one would
00156-05| ingest from smoking a product you wouldn't
00156-06| normally smoke.
00156-07| Q. Because the addition of the
00156-08| levulinic acid would allow or make it easier for
00156-09| people?
00156-10| A. Because it tasted better, it felt
00156-11| better, it wasn't harsh or stingy.
00156-12| Q. So then people would necessarily
00156-13| take larger puffs or --
00156-14| A. Well, they would --
00156-15| MR. KREINER: Objection to form.
00156-16| A. I don't know about larger puffs but
00156-17| they would, they would, they would smoke them at
00156-18| all.
00156-19| Q. What is your understanding of a full
00156-20| flavor product?
00156-21| A. Full flavor means -- usually, it
00156-22| means a product that's got, I don't know what the
00156-23| actual specific definitions. It means higher tar
00156-24| products, products like Winston and Marlboro that
00156-25| have probably 12 or more milligrams of tar and I

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00157-01| don't know how much nicotine.
00157-02| Q. I would like to draw your attention
00157-03| to the last page of Exhibit 11, the first
00157-04| paragraph of that last page where it states, "The
00157-05| last attachment is a listing of key questions
00157-06| provided by some of the critical team members of
00157-07| the XB program."
00157-08| Were certain individuals at this
00157-09| meeting critical of the XB program?
00157-10| A. No. I think --
00157-11| MR. KREINER: Objection to the form.
00157-12| A. I'm sorry. I think it means people
00157-13| who were important team members, not people who
00157-14| were criticizing the project. "Project leaders"
00157-15| would be my interpretation of that, or people who
00157-16| had special expertise.
00157-17| Q. Was the XB program or any cigarette
00157-18| developed from the XB program ever commercialized?
00157-19| A. Not to my knowledge.
00157-20| Q. Do you know whose handwriting that
00157-21| is that appears on the first page of this
00157-22| document?
00157-23| A. There's more than one set of
00157-24| handwriting. Would you tell me which one you
00157-25| mean?

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00158-01| Q. Starting with the one in the top
00158-02| right corner of the first page.
00158-03| A. The one that says, I think it says,
00158-04| "XB Folder"?
00158-05| Q. Okay, that one first. That's the
00158-06| top left-hand corner.
00158-07| A. I don't know whose that is.
00158-08| Q. How about the top right-hand corner
00158-09| where it says, "Draft," something?
00158-10| A. "Draft" something. No, I don't know
00158-11| whose handwriting that is.
00158-12| Q. That's not your handwriting?
00158-13| A. No, I don't think so. It's too

00158-14 | good.
00158-15 | MR. SAHAM: Could we mark this as
00158-16 | Exhibit 12, please.
00158-17 | (Deposition Exhibit No. 12
00158-18 | was marked for identification and
00158-19 | is bound separately.)
00158-20 | Q. Dr. Reynolds, would you please take
00158-21 | a look at what has been marked as Exhibit 12. And
00158-22 | for the record, this is a RJR memorandum dated
00158-23 | January 6, 1981. It is from C. L. Neumann to
00158-24 | Dr. R. A. Lloyd. And it, there's Bates stamp
00158-25 | numbers on the side 50933 8985 through 8987.

----- PAGE00159 -----

00159-01 | A. (Witness peruses document.)
00159-02 | Q. Dr. Reynolds, do you recognize this
00159-03 | document which has been marked as Exhibit 12?
00159-04 | A. I'm on the distribution of it so I
00159-05 | presume that I got a copy of it. I don't remember
00159-06 | seeing it but I presume I did get a copy of it.
00159-07 | Q. Is there anything that leads you to
00159-08 | believe that you didn't receive a copy of it?
00159-09 | A. No.
00159-10 | Q. In this document the subject matter
00159-11 | is, "Extended Use Testing: Nicotine-Satisfaction."
00159-12 | A. Uh-huh.
00159-13 | Q. And the summary of Dr. or Dr. or
00159-14 | Mr. Neumann of this project states, "Substitution
00159-15 | of lowered nicotine test products in extended use
00159-16 | panel testing resulted in dramatically increased
00159-17 | daily nicotine intake despite complete
00159-18 | dissatisfaction with the test product."
00159-19 | Do you know what is being referenced
00159-20 | in that summary paragraph?
00159-21 | A. Only what I have just read over in,
00159-22 | that's in the body of the report.
00159-23 | Q. Do you have any other recollection
00159-24 | of this research other than what --
00159-25 | A. No.

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00160-01 | Q. -- is described?
00160-02 | A. It is Dr. Neumann's work and not
00160-03 | mine.
00160-04 | Q. Would it surprise you to hear that
00160-05 | lower nicotine test products resulted in
00160-06 | dramatically increased daily nicotine intake?
00160-07 | MR. KREINER: Objection to the form.
00160-08 | MR. DAVIS: Objection.
00160-09 | A. That would be, that's strange, yes.
00160-10 | Q. Could that be explained by puffing
00160-11 | or smoking behavior?
00160-12 | MR. KREINER: Objection to the form.
00160-13 | A. After having just quickly scanned
00160-14 | over this document, I really, I really think it is
00160-15 | probably owing to the way in which that was
00160-16 | estimated, the intake was estimated. He didn't --
00160-17 | that's my, my opinion at this point.
00160-18 | Q. But would you agree that puffing or
00160-19 | smoking behavior could have an affect on the
00160-20 | intake of nicotine of a particular product?
00160-21 | MR. KREINER: Objection to form.
00160-22 | A. Yeah, I believe I have already
00160-23 | stated that.
00160-24 | Q. I would like to draw your attention

|00160-25| to the second page of this document under the
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|00161-01| conclusions and recommendations, the second
|00161-02| paragraph Dr. or Mr. Neumann states, "The
|00161-03| apparently paradoxical result that panelists
|00161-04| nicotine increase increased when mainstream FTC
|00161-05| nicotine was lowered, and that this lowered
|00161-06| cigarette was perceived as unsatisfying and
|00161-07| without kick, may strengthen the bolus theory of
|00161-08| smoking: that is, that smokers primarily require a
|00161-09| bolus or surge of nicotine on each puff for
|00161-10| smoking satisfaction."
|00161-11| Have you ever heard of this bolus
|00161-12| theory referenced by Mr. Neumann?
|00161-13| A. Yes.
|00161-14| MR. KREINER: Objection to form.
|00161-15| Q. And what is the, briefly, what is
|00161-16| the basis of that theory?
|00161-17| MR. KREINER: Objection to form.
|00161-18| A. As I recollect, it was a theory
|00161-19| proposed by -- I don't think it was proposed by
|00161-20| tobacco people, it was proposed by somebody in the
|00161-21| smoking literature in trying to come up with
|00161-22| explanations of how and why people smoke. I don't
|00161-23| remember who it was but I have seen that one, that
|00161-24| bolus theory, before.
|00161-25| Q. And presumably this refers to an
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|00162-01| initial kick or burst of nicotine obtained from a
|00162-02| particular puff?
|00162-03| MR. KREINER: Objection to the form.
|00162-04| A. Presumably it does. That's what it
|00162-05| says here.
|00162-06| Q. Did you ever do any research to
|00162-07| either confirm or contradict this theory?
|00162-08| A. The bolus theory?
|00162-09| Q. Correct.
|00162-10| A. I don't believe we had any
|00162-11| particular -- I didn't have any research projects
|00162-12| that I can recall that specifically spoke to the
|00162-13| bolus theory.
|00162-14| Q. Do you have any personal opinion as
|00162-15| to the accuracy of this theory?
|00162-16| MR. KREINER: Objection to the form.
|00162-17| A. I sus- -- I, I'm suspicious of it.
|00162-18| Let me clarify it. I'm suspicious
|00162-19| that it isn't true, that the bolus theory is not
|00162-20| valid.
|00162-21| Q. So you have suspicions as to the
|00162-22| validity of the bolus theory?
|00162-23| A. That is correct. That's what I
|00162-24| meant to say.
|00162-25| Q. Have you done any research, though,
----- PAGE00163 -----

|00163-01| to confirm or deny that theory?
|00163-02| MR. KREINER: Objection to the form,
|00163-03| asked and answered.
|00163-04| A. Not specifically, no.
|00163-05| MR. SAHAM: Mark this as Exhibit 13
|00163-06| please.
|00163-07| (Deposition Exhibit No. 13
|00163-08| was marked for identification and
|00163-09| is bound separately.)

00163-10| Q. Dr. Reynolds, could you take a look
00163-11| at what has been marked as Exhibit 13. And for
00163-12| the record, this document appears to be, to have
00163-13| been distributed to the Product Differentiation
00163-14| Group, of which you are mentioned as a member.
00163-15| Bates 50897 8013 through 8025.

00163-16| A. (Witness peruses document.)

00163-17| THE VIDEOGRAPHER: We've got about
00163-18| five minutes of videotape left.

00163-19| THE WITNESS: Can we take a break
00163-20| right now?

00163-21| MR. SAHAM: That would be fine. Why
00163-22| don't we take a break.

00163-23| THE VIDEOGRAPHER: Off the record at
00163-24| 2:20.

00163-25| (Brief recess.)

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00164-01| THE VIDEOGRAPHER: This begins Tape
00164-02| 3 on the record at 2:29.

00164-03| Q. And if it helps, Dr. Reynolds, I'm
00164-04| only going to be asking you questions about the
00164-05| first four pages of what has been marked as
00164-06| Exhibit 13 but certainly feel free to --

00164-07| A. Okay, let me look it over, if you
00164-08| don't mind. (Witness peruses document.)

00164-09| Q. Dr. Reynolds, do you recognize what
00164-10| has been marked as Exhibit 13?

00164-11| A. I think that, since I'm on the page
00164-12| which I presume is the distribution as well as the
00164-13| listing of to the people on the Product
00164-14| Differential Group, that I probably have seen this
00164-15| before.

00164-16| Q. And you were a member of the Product
00164-17| Differentiation Group?

00164-18| A. Yes.

00164-19| Q. And there is nothing that leads you
00164-20| to believe that you did not receive this document
00164-21| in the ordinary course of your employment --

00164-22| A. That's true.

00164-23| Q. -- at Reynolds? Can I draw your
00164-24| attention to the second page of this document,
00164-25| No. 2, where the author states, "Virtually all

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00165-01| cigarettes can be made to yield the desired amount
00165-02| of nicotine depending on the size of the puff
00165-03| taken and the extent to which the puff is
00165-04| inhaled."

00165-05| Do you agree with that statement?

00165-06| MR. KREINER: Objection to the form.

00165-07| A. I'm looking for where it says that.

00165-08| Q. On the second page.

00165-09| A. Oh, the second page?

00165-10| Q. Yeah.

00165-11| A. I'm sorry.

00165-12| Q. Next to No. 2.

00165-13| A. (Witness peruses document.)

00165-14| I don't know that I totally agree
00165-15| with that statement.

00165-16| Q. What portion do you agree with?

00165-17| A. Well, certainly there are lots of
00165-18| different kinds of cigarettes and some of them
00165-19| have large amounts of what we call filter
00165-20| ventilation. And it's, if they have a high enough

00165-21 | level of filter ventilation, it is impossible to
00165-22 | affect the yields very much.
00165-23 | Some cigarettes, as we, as we have
00165-24 | discussed earlier today, have very little amount
00165-25 | of, very little, or have had very low amounts of

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00166-01 | nicotine in them and so you can't just manufacture
00166-02 | willy-nilly nicotine.

00166-03 | And then it says, "the desired
00166-04 | amount of nicotine." I'm not sure whose desire
00166-05 | that is. If you, if it is a researcher in the lab
00166-06 | with a smoking machine, you can change the smoking
00166-07 | parameter of the smoking machine around to move
00166-08 | the nicotine yield to some level or not -- lever
00166-09 | or other.

00166-10 | Q. If you exclude those cigarettes with
00166-11 | the filter ventilation you have described and the
00166-12 | very low nicotine cigarettes, would you then say
00166-13 | that this statement is generally accurate?

00166-14 | MR. DAVIS: Objection.

00166-15 | MR. KREINER: Objection to the form.

00166-16 | A. I think there are other puffing
00166-17 | parameters that affect nicotine yield than the
00166-18 | size of the puff.

00166-19 | Q. So would you agree that puff
00166-20 | parameters -- would you agree with this statement
00166-21 | then: Virtually all cigarettes, excluding those
00166-22 | with the filter ventilation you have described and
00166-23 | the low nicotine cigarettes you have described,
00166-24 | yield the desired amount of nicotine depending on
00166-25 | the puff parameters, period?

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00167-01 | MR. DAVIS: Objection.

00167-02 | MR. KREINER: Objection to the form.

00167-03 | A. And I would, I would still to the
00167-04 | extent to which the puff is inhaled is also
00167-05 | important. So given those stipulations, I would
00167-06 | say that's theoretically true.

00167-07 | Q. And this, this -- that would apply
00167-08 | to conventional light cigarettes as well, is that
00167-09 | correct?

00167-10 | MR. KREINER: Objection to form.

00167-11 | MR. DAVIS: Objection.

00167-12 | Q. Let me strike that question.
00167-13 | Conventional light cigarettes would fall within
00167-14 | the category given the stipulations we have just
00167-15 | made?

00167-16 | MR. DAVIS: Objection.

00167-17 | MR. KREINER: Objection to the form.

00167-18 | A. By "conventional cigarettes," do you
00167-19 | mean chopped-up tobacco, rolled in paper in a
00167-20 | cylindrical form and burned? In that case I would
00167-21 | say that's probably I would agree.

00167-22 | Q. I would like to turn your attention
00167-23 | to the next page, the second bullet point where
00167-24 | the author states, "With the exception of the
00167-25 | smokers of the lowest nicotine yield cigarette

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00168-01 | (0.1mg) there was no statistically difference in
00168-02 | the circadian mean plasma nicotine concentration
00168-03 | (Nc) of any of the smokers. (Note: this suggests
00168-04 | that these smokers were 'self-titrating' with
00168-05 | nicotine with essentially the same 'dose.')

00168-06 | In any of your research did you ever
00168-07 | observe self-titration of smokers to a particular
00168-08 | nicotine dose?
00168-09 | MR. DAVIS: Objection.
00168-10 | MR. KREINER: Objection to the form.
00168-11 | A. I don't think so.
00168-12 | Q. Other than this research, do you
00168-13 | remember any other discussions regarding this
00168-14 | issue?
00168-15 | MR. KREINER: Objection to the form.
00168-16 | A. This, this claim of self-titration
00168-17 | has been in the literature for a long time and
00168-18 | we've probably discussed it.
00168-19 | Q. Any other research at Reynolds other
00168-20 | than this research described in Exhibit 13 that
00168-21 | you can recall that dealt with this discussion?
00168-22 | MR. KREINER: Objection to the form.
00168-23 | A. This is not R.J. Reynolds research.
00168-24 | Q. Is this an analysis of external --
00168-25 | A. This is an analysis of external

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00169-01 | research, as far as I can tell. He's referencing
00169-02 | Table I, which is by this gentleman Teeuwen at the
00169-03 | Ph.D. Thesis University of some place in Holland,
00169-04 | I presume. And then he's referencing Table II,
00169-05 | which is authored by M. A. H. Russell, that we
00169-06 | discussed Russell before.
00169-07 | And then these latter tables that
00169-08 | are attached I presume are coming from routine
00169-09 | analytical laboratory data from R.J. Reynolds in
00169-10 | our -- or they may come from the FTC reports
00169-11 | themselves, compiled and then produced.
00169-12 | So this, to my knowledge, this
00169-13 | research that this gentleman who or this
00169-14 | individual who is writing this analysis is not
00169-15 | R.J. Reynolds research.
00169-16 | Q. But at least some of the references
00169-17 | in the back may have come from R.J. Reynolds?
00169-18 | A. Well, what --
00169-19 | MR. KREINER: Objection to the form.
00169-20 | A. Excuse me. The page beginning 50897
00169-21 | 8020 through 8025 may have, may be stuff coming
00169-22 | out of our labs because we did do brand
00169-23 | surveillance. We looked at everybody else's
00169-24 | cigarette brands all the time, but I'm not sure
00169-25 | this is not actually a printout from an FTC

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00170-01 | report. I can't tell from looking at it.
00170-02 | Q. Do you know who drafted Exhibit 13?
00170-03 | A. No, I don't.
00170-04 | Q. Would you presume that it was
00170-05 | someone from within the Product Differentiation
00170-06 | Group at R.J. Reynolds?
00170-07 | MR. KREINER: Objection to the form.
00170-08 | A. May, may be one of those individuals
00170-09 | or may be that someone with some help.
00170-10 | Q. Okay. I draw your attention to the
00170-11 | first page of this document, the first individual
00170-12 | listed, William S. Simmons.
00170-13 | A. Right.
00170-14 | Q. Who was Mr. Simmons?
00170-15 | A. He was, he had the title of Director
00170-16 | of Smoking and Health.

00170-17| Q. And what --
00170-18| A. He's a PhD biochemist, I believe.
00170-19| Q. And What was the Smoking and Health
00170-20| Department?
00170-21| A. They were responsible for looking at
00170-22| basically the literature on smoking and health
00170-23| and, you know, being aware of what was in the
00170-24| literature and making reports on it to R.J.
00170-25| Reynolds management and researchers.

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00171-01| Q. Would you generally be routed
00171-02| materials from the Smoking and Health Department?
00171-03| MR. KREINER: Objection to the form.
00171-04| A. No.
00171-05| Q. On some occasion would you
00171-06| receive --
00171-07| A. I think probably, if you are talking
00171-08| about this particular document here, it's probably
00171-09| because I was a member of this Product
00171-10| Differentiation Group that I got this document.
00171-11| Q. And again, Dr. Reynolds, the court
00171-12| reporter can't take us both at the same time --
00171-13| A. I'm sorry.
00171-14| Q. -- so if you could wait until I am
00171-15| done speaking, that would make her job a lot
00171-16| easier.
00171-17| I draw your attention to the fourth
00171-18| page of this document, where the author states,
00171-19| "The results of both these studies are consistent
00171-20| with the propositions that:
00171-21| "1: Smokers of low yield cigarettes
00171-22| adjust their smoking maneuver to obtain some
00171-23| desired level of nicotine and therefore
00171-24| concomitantly increase their tar intake."
00171-25| Would you agree with that statement?

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00172-01| MR. KREINER: Objection to the form.
00172-02| A. I don't believe I agree completely
00172-03| with that statement.
00172-04| Q. Which portion do you agree with?
00172-05| A. I don't necessarily believe that
00172-06| they adjust their smoking maneuvers to obtain some
00172-07| desired level of nicotine.
00172-08| Q. But you do agree that they adjust
00172-09| their smoking behavior?
00172-10| A. Some of them adjust their smoking
00172-11| behavior.
00172-12| Q. And there is a trend of that --
00172-13| A. There is a trend that we discussed
00172-14| earlier, yes.
00172-15| Q. And the, the difference between your
00172-16| opinion and the opinion expressed in these studies
00172-17| is the cause of that adjustment; is that correct?
00172-18| MR. KREINER: Objection to the form.
00172-19| MR. DAVIS: Objection.
00172-20| A. All I'm going by is what he says
00172-21| here, that they "adjust their smoking maneuver to
00172-22| obtain some desired level of nicotine and
00172-23| therefore concomitantly increase their tar
00172-24| intake." And I don't agree that that's the sole
00172-25| motivation for the way that they adjust their

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00173-01| tar -- their puffing behavior.

00173-02| Q. Would you agree that that's a
00173-03| potential behavior?
00173-04| MR. DAVIS: Objection.
00173-05| A. I believe that nicotine may play
00173-06| some role in it but I don't believe it's the cause
00173-07| of it.
00173-08| Q. And you never, never did any
00173-09| research to rule out nicotine as the cause of that
00173-10| behavior?
00173-11| A. We did a lot of research in which we
00173-12| looked at smoking behavior. And the sum total of
00173-13| that research leads me to believe that nicotine
00173-14| isn't the cause, it is a potential contributor to
00173-15| it.
00173-16| Q. So you are saying it is not the sole
00173-17| cause?
00173-18| A. That's true.
00173-19| Q. But it could be an element in the
00173-20| cause?
00173-21| A. Yes, it could be.
00173-22| Q. The second conclusion stated here
00173-23| is, "The somewhat lower T/N ratio of low yield
00173-24| cigarettes insures a lower tar intake in a smoker
00173-25| who switches to lower tar cigarettes even if he

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00174-01| adjusts his smoking maneuver to obtain more
00174-02| nicotine."
00174-03| Do you agree with that statement?
00174-04| MR. KREINER: Objection to the form.
00174-05| A. I, I wouldn't say I have a blanket
00174-06| agreement with that statement.
00174-07| Q. What particular portions of that
00174-08| statement would you disagree with?
00174-09| MR. DAVIS: Objection.
00174-10| A. Well, to begin with, this person is
00174-11| referring to a summary of some cigarette brands
00174-12| that I don't know anything about, whether they do
00174-13| or don't have lower T/N, tar-to-nicotine, ratios.
00174-14| So I don't know that all -- I don't know for a
00174-15| fact that all low tar cigarettes have low
00174-16| tar-to-nicotine ratios.
00174-17| Q. But with respect --
00174-18| A. It, it --
00174-19| Q. -- with respect to a cigarette that
00174-20| did have a low tar-to-nicotine ratio --
00174-21| A. If you make, I can, I can construct
00174-22| a train of assumptions that would lead one to
00174-23| believe, to, to agree with that. If you took the
00174-24| same size puff -- let's limit to it one situation.
00174-25| You take the same size puff; you expose two

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00175-01| individuals to exactly the same amount of smoke,
00175-02| one which of is from a cigarette that has a low
00175-03| T/N and one has a high T/N; they adjust the smoke;
00175-04| they absorb absolutely all of it; then, yeah, the
00175-05| one who gets the low, with the low tar-to-nicotine
00175-06| ratio is going to get less tar, assuming that the
00175-07| entire ingested amount was the same.
00175-08| Q. Then concurrently -- or, or, strike
00175-09| that.
00175-10| Would it also be correct or would
00175-11| you also agree that if you had a low tar and
00175-12| nicotine, a low tar-to-nicotine cigarette that

00175-13 | didn't have a lower tar-to-nicotine ratio, the
00175-14 | smoker wouldn't necessarily ingest less tar and
00175-15 | nicotine than a standard, full-flavored cigarette?
00175-16 | MR. DAVIS: Objection.
00175-17 | MR. KREINER: Objection to the form.
00175-18 | A. That seems to me a completely
00175-19 | different construction of the question and even of
00175-20 | the statement here. Because this statement here
00175-21 | is talking about low yield cigarette and you were
00175-22 | talking about low yield cigarettes versus non-low
00175-23 | yield cigarettes if I got your --
00175-24 | Q. That's correct --
00175-25 | A. -- drift.

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00176-01 | Q. -- I was changing the --
00176-02 | A. Yes, so I --
00176-03 | Q. -- parameters some.
00176-04 | A. -- could you ask me the question in
00176-05 | a way that I can understand it.
00176-06 | Q. I'll do my best, sir.
00176-07 | If you had a low tar/nicotine
00176-08 | cigarette that didn't have a low, lower
00176-09 | tar-to-nicotine ratio, that had the same
00176-10 | tar-to-nicotine ratio as a standard full-flavored
00176-11 | cigarette, would the adjustments made generally by
00176-12 | smokers in the smoking maneuver not necessarily
00176-13 | result in smokers taking in less tar and nicotine
00176-14 | than they would in a full, in smoking a
00176-15 | full-flared product?
00176-16 | MR. DAVIS: Objection.
00176-17 | MR. KREINER: Objection to the form.
00176-18 | A. I think what you have asked me was
00176-19 | that -- it was two things. One is if, if it were
00176-20 | possible for a smoker to adjust -- of a low tar
00176-21 | and nicotine -- low tar cigarette to adjust his
00176-22 | smoking behaviour to obtain the same amount of
00176-23 | smoke as he would have gotten from a higher tar
00176-24 | cigarette. That was the first part of premise.
00176-25 | Q. Correct.

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00177-01 | A. The second part of the premise has
00177-02 | to do with something with the T/N ratio. And if
00177-03 | the T/N ratios were the same, would they get the
00177-04 | same amount of tar?
00177-05 | Given all those assumptions, if you
00177-06 | take the same, if you take the same amount of
00177-07 | smoke out of any cigarette -- somehow you manage
00177-08 | the extract the same amount of smoke from
00177-09 | cigarette A as from cigarette B -- and they have
00177-10 | exactly the same T/N ratio and making some other
00177-11 | assumptions, then yeah, he gets the same amount of
00177-12 | tar.
00177-13 | But I don't see, I mean that really
00177-14 | doesn't relate too well to this.
00177-15 | MR. SAHAM: You can mark this as
00177-16 | Exhibit 14, please.
00177-17 | (Deposition Exhibit No. 14
00177-18 | was marked for identification and
00177-19 | is bound separately.)
00177-20 | Q. Could you please take a look at what
00177-21 | has been marked as Exhibit 14, Dr. Reynolds. And
00177-22 | for the record, this is an August 8, 1985,
00177-23 | interoffice memorandum from David Gilbert to John

|00177-24| Reynolds, and the subject is, "Updated plans for
|00177-25| article writing and submission."

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|00178-01| A. (Witness peruses document.)
|00178-02| Q. Dr. Reynolds, I would draw your
|00178-03| attention to the last sentence of the first
|00178-04| paragraph, where Dr. Gilbert states, "I would also
|00178-05| continue working on these articles on my home
|00178-06| computer in Illinois. Thus, I would be able to
|00178-07| assure confidentiality until receiving RJR
|00178-08| approval for submitting the proposed articles or
|00178-09| publication."
|00178-10| Why would an individual be concerned
|00178-11| with confidentiality of -- or strike that.
|00178-12| Was this confidentiality dictated by
|00178-13| company policy?
|00178-14| MR. DAVIS: Objection.
|00178-15| MR. KREINER: Objection to the form.
|00178-16| A. All these studies were performed
|00178-17| while he was an employee of R.J. Reynolds Tobacco
|00178-18| Company; and all publications done -- all
|00178-19| publications of research done while you are an
|00178-20| employee of R.J. Reynolds Tobacco Company have to
|00178-21| go through the publication review process like
|00178-22| they do at any other place where you are
|00178-23| publishing stuff.
|00178-24| And anybody who is in the research
|00178-25| game, whether they are academics or not, doesn't

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|00179-01| want to tell his potential rivals in academia
|00179-02| and/or his competitors, you know, what he's got
|00179-03| until he is ready to publish it. So that's what
|00179-04| he is talking about.
|00179-05| Q. Why would he maintain this on his
|00179-06| home computer as opposed to a company computer?
|00179-07| A. He, he --
|00179-08| MR. DAVIS: Objection.
|00179-09| MR. KREINER: Objection.
|00179-10| A. Excuse me. He had taken a job. He
|00179-11| had left the employ of R.J. Reynolds and was at
|00179-12| this point I think he was just beginning his work
|00179-13| as an assistant professor in the -- at the
|00179-14| University of Illinois at Carbondale. But he was
|00179-15| still committed to help us work up these
|00179-16| publications on work that he had done while he was
|00179-17| an employee.
|00179-18| Q. Was the research work routinely
|00179-19| reviewed by the Law Department while you were at
|00179-20| R.J. Reynolds?
|00179-21| A. Yes.
|00179-22| MR. KREINER: Objection to the form.
|00179-23| A. As far as I know, it was.
|00179-24| Q. Were the lawyers playing a role in
|00179-25| the decision-making process as to what research

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|00180-01| was initiated?
|00180-02| MR. KREINER: Objection to the form.
|00180-03| A. As to what research was initiated?
|00180-04| Q. Correct.
|00180-05| MR. KREINER: Again, objection to
|00180-06| the form. And caution the witness to respect, to
|00180-07| the extent it requires you to reveal any
|00180-08| attorney-client or communications to be sensitive

00180-09 | to that.

00180-10 | A. Let me ask, let me see if I

00180-11 | understand the question.

00180-12 | The question was: Was the Law

00180-13 | Department involved in research that was to be, in

00180-14 | deciding whether some kinds of research ought to

00180-15 | be initiated?

00180-16 | Q. Correct.

00180-17 | MR. KREINER: Same objections.

00180-18 | A. I don't think as a general policy

00180-19 | they were. Sometimes they would actually ask us

00180-20 | to do things.

00180-21 | Q. So the Law Department during your

00180-22 | tenure at Reynolds sometimes would ask you to

00180-23 | conduct a particular research?

00180-24 | A. Yes --

00180-25 | MR. KREINER: Objection to the form.

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00181-01 | A. -- sometimes they would.

00181-02 | Q. Do you have any understanding as to

00181-03 | why lawyers would be dictating what research would

00181-04 | be conducted by the company?

00181-05 | MR. KREINER: Objection to the form.

00181-06 | A. In the specific instance that I

00181-07 | mentioned where I think there was, sometimes they

00181-08 | would want you -- I did a lot of different, I'm

00181-09 | sorry, I did a lot of different jobs when I was at

00181-10 | R.J. Reynolds. Part of the time I was involved in

00181-11 | product design and part of the time I was involved

00181-12 | in product development. Occasionally, stuff would

00181-13 | come in the door from an outside, what we would

00181-14 | call an outsider idea, some non-employee writes

00181-15 | in, says, "I have this wonderful idea you ought to

00181-16 | try." And sometimes the Law Department would say,

00181-17 | "Well, yeah, you probably ought to look at this,"

00181-18 | and we would do that.

00181-19 | There was, there were at least two

00181-20 | cases in which there were some patent -- at least

00181-21 | one case I was involved in where there was some

00181-22 | patent issues and we were asked to do some work to

00181-23 | investigate some R.J. Reynolds processes because

00181-24 | there was some litigation about whether our patent

00181-25 | was valid vis-a-vis somebody else's patent.

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00182-01 | And then there was one case in which

00182-02 | R.J. Reynolds and a couple of other tobacco

00182-03 | companies had actually lodged a complaint against

00182-04 | a third tobacco company and we were asked to do

00182-05 | some research in support of that complaint.

00182-06 | Q. Did you have any understanding as to

00182-07 | whether any of these studies referenced in

00182-08 | Exhibit 14 required Law Department approval?

00182-09 | MR. KREINER: Objection to the form.

00182-10 | A. Part of the, part of the publication

00182-11 | review process was a, a submission of the proposed

00182-12 | article to the Law Department for them to look

00182-13 | at --

00182-14 | Q. So the --

00182-15 | A. -- now whether they, whether they

00182-16 | had blanket approval or not is another question.

00182-17 | They certainly reviewed them all.

00182-18 | Q. So before an article could be

00182-19 | submitted for publication it needed to be reviewed

00182-20 | by the Law Department?
00182-21 | A. It needed to be reviewed by all of
00182-22 | R&D, the major part of R&D management, not just
00182-23 | the Law Department. Everybody, all your
00182-24 | hierarchy, all your bosses from whatever the next
00182-25 | level up, up to the top guy, up and including the
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00183-01 | law people, got reviewed.
00183-02 | Q. So it is your understanding that the
00183-03 | Law Department had input as to whether or not a
00183-04 | study would be submitted for publication?
00183-05 | MR. KREINER: Objection to the form,
00183-06 | mischaracterizes.
00183-07 | A. They reviewed the articles. Now
00183-08 | what their input was was whatever it was, I don't
00183-09 | know.
00183-10 | Q. Does it concern you that the Law
00183-11 | Department may have been able to prevent a study
00183-12 | from being submitted for publication?
00183-13 | MR. DAVIS: Objection.
00183-14 | MR. KREINER: Objection to the form,
00183-15 | lack of foundation, assumes facts not in evidence.
00183-16 | A. You know, I, not particularly, no.
00183-17 | There may be good reasons they didn't want you to
00183-18 | publish something. Suppose you had a wonderful
00183-19 | discovery and they didn't want you to tell the
00183-20 | other guys about it until we had a patent.
00183-21 | Q. Do you remember receiving this
00183-22 | document in August of 1985?
00183-23 | A. I don't specifically remember it,
00183-24 | but I'm -- obviously, he wrote it to me. And he
00183-25 | was, when he was employed at R.J. Reynolds, he
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00184-01 | reported to me, so I presume that I did receive
00184-02 | this document.
00184-03 | Q. Do you have any reason to believe
00184-04 | that this document wasn't received by you in the
00184-05 | regular course of business during your employment
00184-06 | at R.J. Reynolds?
00184-07 | A. No, I do not.
00184-08 | MR. SAHAM: Mark this as Exhibit 15,
00184-09 | please.
00184-10 | (Deposition Exhibit No. 15
00184-11 | was marked for identification and
00184-12 | is bound separately.)
00184-13 | MR. SAHAM: For the record, Exhibit
00184-14 | 15 is an RJR interoffice memorandum from Alan
00184-15 | Rodgman to Dr. Chin K. Lee. And it is dated
00184-16 | October 11, 1978, and it bears side Bates 50196
00184-17 | 5584.
00184-18 | MR. KREINER: For the record,
00184-19 | counsel, I believe this is one of the privileged
00184-20 | document. It is publicly available; and as I
00184-21 | stated earlier, we object on privilege grounds but
00184-22 | we do instruct the witness to answer your
00184-23 | questions.
00184-24 | A. (Witness peruses document.)
00184-25 | BY MR. SAHAM:
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00185-01 | Q. In this document Dr. Rodgman states
00185-02 | to Dr. Lee, "I discussed with Mr. Max Crohn
00185-03 | (Legal) your September 20 memo on our Ames testing
00185-04 | program, your proposal and the specific advantages

00185-05 | of investigating tobacco smoke condensate
00185-06 | fractions (including denicotinized smoke
00185-07 | condensate).
00185-08 | "Mr. Crohn remains adamant that
00185-09 | investigation of the mutagenicity of tobacco smoke
00185-10 | condensate fractions is unwise from a legal point
00185-11 | of view. To conduct such experiments will
00185-12 | compromise the philosophy of our defense against
00185-13 | claims raised in the smoking health issue.
00185-14 | "This refusal and the reasons for it
00185-15 | parallel previous ones by legal to permit study of
00185-16 | smoke condensate fractions in mouse skin painting
00185-17 | experiments. In fact, Legal has been and is even
00185-18 | unwilling to permit denicotinization of whole
00185-19 | smoke condensate prior to study of its effect in
00185-20 | mouse skin painting or mutagenicity studies.
00185-21 | "In accordance with Legal's wishes
00185-22 | and reasons, permission to examine the
00185-23 | mutagenicity of smoke condensate fractions and
00185-24 | denicotinized tobacco smoke condensate is
00185-25 | refused."

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00186-01 | During your tenure at Reynolds, was
00186-02 | any proposed research that you proposed conducting
00186-03 | ever denied --
00186-04 | MR. DAVIS: Objection.
00186-05 | Q. -- by a legal department?
00186-06 | MR. KREINER: Objection, that's
00186-07 | outside of this document. It is my understanding
00186-08 | that you are permitted to reference this document
00186-09 | and not others or not other instances not
00186-10 | referenced in the document.
00186-11 | MR. SAHAM: So are you instructing
00186-12 | him not to answer?
00186-13 | MR. KREINER: Can I, can I hear the
00186-14 | question again, please?
00186-15 | MR. SAHAM: Could you read back the
00186-16 | question, please?
00186-17 | MR. DAVIS: Just the last part of
00186-18 | it.
00186-19 | MR. SAHAM: Yeah, not the whole
00186-20 | statement.
00186-21 | MR. KREINER: Not to wholly read the
00186-22 | document.
00186-23 | (The reporter read back the portion
00186-24 | of the pending question requested.)
00186-25 | MR. KREINER: My only instruction is

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00187-01 | to the extent it requires divulging the
00187-02 | attorney-client communications I instruct the
00187-03 | witness not to answer.
00187-04 | MR. SAHAM: I'm not asking about the
00187-05 | substance of the, of the communications. But were
00187-06 | you ever instructed not to conduct or continue the
00187-07 | conduct of any research by the Legal Department
00187-08 | during your tenure at Reynolds?
00187-09 | MR. DAVIS: Go ahead and answer if
00187-10 | there's no objection to it.
00187-11 | A. Okay. Let me hear the question one
00187-12 | more time so I'm sure I understand what you're
00187-13 | asking me.
00187-14 | MR. SAHAM: Could you repeat the
00187-15 | last one?

00187-16| THE WITNESS: Just the last part,
00187-17| not the whole.
00187-18| MR. DAVIS: The new question, what
00187-19| was just asked.
00187-20| THE WITNESS: The new, the new
00187-21| question.
00187-22| MR. DAVIS: Correct?
00187-23| MR. SAHAM: Correct, correct.
00187-24| THE WITNESS: I still want to hear
00187-25| it.

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00188-01| (The reporter read back the pending
00188-02| question.)
00188-03| A. Okay. So the question is, did the
00188-04| Law Department ever come and tell me not to do
00188-05| something, not to, not to engage in research or
00188-06| not to continue some kind of research?
00188-07| Q. Correct.
00188-08| A. I can't recall an instance where the
00188-09| Law Department told me not to continue research or
00188-10| not to do some research.
00188-11| Q. Can you recall any instance where
00188-12| the Law Department instructed another individual
00188-13| in the R&D Department not to continue research or
00188-14| not to initiate particular research?
00188-15| MR. KREINER: Same objection as I
00188-16| lodged to the earlier question.
00188-17| A. Well, I can't, you know, I don't
00188-18| know of every possible, you know -- I don't know
00188-19| of every possible conversation the law, someone in
00188-20| the Law Department may have had with XYZ
00188-21| individual, so I can't answer for everybody.
00188-22| I can say I was not aware that
00188-23| people were being denied the permission to do
00188-24| research. I was not, I have not ever seen this
00188-25| document until today.

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00189-01| Q. Do the contents of Exhibit 15
00189-02| surprise you?
00189-03| MR. KREINER: Objection to the form.
00189-04| A. I, I can say that I have never seen
00189-05| it before.
00189-06| Q. Does it concern you, the contents of
00189-07| Exhibit 15?
00189-08| MR. KREINER: Objection to the form.
00189-09| A. Well, I don't know what the, aside
00189-10| from exactly what it says on the face of it here,
00189-11| what the reasons were for this decision being
00189-12| made; so, you know, I really don't have a concern
00189-13| one way or the other.
00189-14| Q. Would it concern you if research
00189-15| within Reynolds was being instructed not to be
00189-16| conducted because of its impact to the defense of
00189-17| smoking and health claims?
00189-18| MR. KREINER: Objection to the form.
00189-19| A. Well, yeah, that does concern me a
00189-20| little bit. The fact is, though, that later, as
00189-21| far as I know, we did tons of research that was
00189-22| the same stuff here. It all got published, or
00189-23| lots of it did.
00189-24| MR. SAHAM: Could we mark this as
00189-25| Exhibit 16.

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00190-01 | And, Dr. Reynolds, you can keep
00190-02 | Exhibit 15 as well.
00190-03 | THE WITNESS: Okay.
00190-04 | (Deposition Exhibit No. 16
00190-05 | was marked for identification and
00190-06 | is bound separately.)
00190-07 | Q. Dr. Reynolds, have you ever heard of
00190-08 | the "Frank Statement to Cigarette Smokers"?
00190-09 | MR. KREINER: Counsel, did you want
00190-10 | him to review that first, or?
00190-11 | MR. SAHAM: I guess he can answer it
00190-12 | prior.
00190-13 | A. I'm going to read it because I
00190-14 | don't, I can't know if I have heard or seen it
00190-15 | until I see what it says.
00190-16 | Q. Okay. Feel free to look at it, sir.
00190-17 | A. (Witness peruses document.)
00190-18 | Well, I can say this is the first
00190-19 | time I have ever seen this document that I know
00190-20 | of.
00190-21 | Q. Have you ever heard any reference to
00190-22 | the "Frank Statement to Cigarette Smokers"?
00190-23 | MR. KREINER: Objection to the form.
00190-24 | A. I can remember, I can only remember
00190-25 | one reference to it.

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00191-01 | Q. And what was that reference?
00191-02 | A. That was in a discussion with
00191-03 | counsel.
00191-04 | Q. In preparation for this deposition?
00191-05 | MR. KREINER: Objection to the
00191-06 | extent it requires you to divulge attorney-client
00191-07 | communications.
00191-08 | A. Yes.
00191-09 | Q. Were you aware that in 1954 the
00191-10 | tobacco industry took out full-page advertisements
00191-11 | in newspapers throughout the United States in
00191-12 | which the industry stated, "We accept an interest
00191-13 | in people's health as a basic responsibility
00191-14 | paramount to every other consideration in our
00191-15 | business"?
00191-16 | MR. KREINER: Objection, assumes
00191-17 | facts not in evidence.
00191-18 | Q. And I'll continue, "We always have
00191-19 | and always will cooperate closely with those whose
00191-20 | task it is to safeguard the public health and we
00191-21 | are pledging aid and assistance to the research
00191-22 | efforts into all phases of tobacco use and
00191-23 | health."
00191-24 | A. And the question was, was I aware in
00191-25 | 1954 that this had been in the newspapers?

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00192-01 | Q. No. My question is, were you aware
00192-02 | at any time that this had happened in 1954, that
00192-03 | these advertisements making these statements were
00192-04 | ran in newspapers throughout the United States?
00192-05 | MR. KREINER: Objection to the form.
00192-06 | A. As I mentioned a minute ago, the
00192-07 | first, I had not seen this before. The only time
00192-08 | I had heard about the frank statement was, was it
00192-09 | was mentioned to me by counsel in preparation for
00192-10 | this deposition. And I had not read it then or
00192-11 | now; so except for that, I wasn't aware of it.

00192-12| Q. Is it your feeling that the
00192-13| cigarette manufacturing companies have a duty to
00192-14| provide information regarding the health effects
00192-15| of their products to the public?
00192-16| MR. DAVIS: Objection.
00192-17| MR. KREINER: Objection to the form.
00192-18| A. Do the tobacco companies, do tobacco
00192-19| manufacturers have a duty to provide health
00192-20| information about their products --
00192-21| MR. DAVIS: Objection.
00192-22| A. -- to consumers?
00192-23| Q. To consumers.
00192-24| A. I think probably they do.
00192-25| Q. Do you think, turning your attention

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00193-01| back to Exhibit 15, that the Legal Department's
00193-02| refusal to permit denicotinization of whole smoke
00193-03| condensate prior to study of its effects in mouse
00193-04| skin painting for mutagenicity studies is
00193-05| consistent to that duty?
00193-06| MR. DAVIS: Objection.
00193-07| MR. KREINER: Objection to the form,
00193-08| and just note my privilege objection.
00193-09| A. And the question is, did I, are my
00193-10| two positions consistent?
00193-11| Q. No, the question --
00193-12| A. My position on what I stated in
00193-13| terms of the tobacco company's or the company's
00193-14| needs to report information consistent with what
00193-15| it says in this thing here?
00193-16| Q. Correct.
00193-17| MR. KREINER: Same objections.
00193-18| A. Well, I don't know what the legal
00193-19| strategy is here that they are talking about.
00193-20| And, you know, I'm not sure if they are consistent
00193-21| or inconsistent. One is one thing, one is the
00193-22| other.
00193-23| He says they won't do this prior to
00193-24| doing this other study. So I don't know whether
00193-25| they want to do that other study first or then do

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00194-01| something else, or whatever.
00194-02| Q. Well, the statement basically
00194-03| Mr. Rodgman or Dr. Rodgman seems to be stating
00194-04| that Legal has forbidden to permit or has refused
00194-05| to permit denicotinization of whole smoke
00194-06| condensate -- strike that.
00194-07| Would you agree that Exhibit 15
00194-08| described -- in Exhibit 15 Dr. Rodgman
00194-09| communicates to Dr. Lee that the Legal Department
00194-10| has refused his request to conduct a particular
00194-11| type of research?
00194-12| MR. KREINER: Objection to the form,
00194-13| lack of foundation.
00194-14| MR. DAVIS: Objection.
00194-15| A. That's apparently what it says.
00194-16| Q. And that refusal -- or strike that.
00194-17| Would you agree that that refusal
00194-18| described in Exhibit 15 is inconsistent with the
00194-19| tobacco industry's duty to provide information to
00194-20| the public regarding the effects of its product on
00194-21| smokers?
00194-22| MR. DAVIS: Objection.

00194-23| MR. KREINER: Objection to the form,
00194-24| assumes facts not in evidence, asked and answered.
00194-25| A. Okay. Given that I'm not a, that

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00195-01| mutagenicity, et cetera, et cetera, is not my
00195-02| expertise and that I don't know for sure what
00195-03| this, what other things might have been
00195-04| influencing Mr. Crohn's decision, I would have to
00195-05| say it does seem to be inconsistent.
00195-06| Q. Is it correct that cigarette smoking
00195-07| is associated with certain diseases?
00195-08| MR. KREINER: Objection to the form.
00195-09| A. There are, to the best of my
00195-10| knowledge, not being a doctor, a medical doctor,
00195-11| or a biologist or a demographer or a
00195-12| epidemiologist, there are studies which indicate
00195-13| that there are statistical links between cigarette
00195-14| smoking and certain diseases.
00195-15| Q. Which diseases?
00195-16| A. There's a huge number of them.
00195-17| Cancer, heart disease are two that come to mind.
00195-18| Q. Emphysema?
00195-19| A. Yes.
00195-20| Q. Any other diseases that come to
00195-21| mind?
00195-22| A. Those are the principal ones I
00195-23| think. There may be many -- there may be others.
00195-24| Q. Dr. Reynolds, what's a free radical?
00195-25| A. A free radical is essentially a

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00196-01| molecular fragment.
00196-02| Q. Would you agree that free radicals
00196-03| can be detected in cigarette smoke?
00196-04| A. Free radicals can be detected under
00196-05| very, certain very prescribed circumstances in
00196-06| cigarette smoke.
00196-07| Q. What are those prescribed
00196-08| circumstances?
00196-09| A. I probably can't recall everything,
00196-10| but there is a very -- there's a procedure that
00196-11| you must follow in the laboratory to be able to
00196-12| detect free radicals in cigarette smoke;
00196-13| otherwise, they are not detected.
00196-14| Q. But free radicals are in fact in
00196-15| cigarette smoke, whether or not you use these
00196-16| procedures to detect them; is that correct?
00196-17| A. One would, given the way that
00196-18| combustion works, probably at certain times during
00196-19| the combustion processes there are free radicals
00196-20| in cigarette smoke. There are certainly free
00196-21| radicals in cigarette smoke if the smoke is
00196-22| trapped and treated and the experiments are
00196-23| performed properly in the laboratory, there is --
00196-24| are free radicals in the smoke that is so trapped
00196-25| and treated.

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00197-01| Q. And free radicals are associated
00197-02| with certain health effects, are they not?
00197-03| MR. KREINER: Objection to the form.
00197-04| A. There's a whole -- not being a
00197-05| physiologist or even a free radical chemist, for
00197-06| that matter, or a doctor or a physiologist, there
00197-07| are theories of various kinds of processes that

00197-08 | occur in the body that involve free radicals.
00197-09 | Q. And are some of those processes
00197-10 | negative health effects?
00197-11 | MR. KREINER: Objection to the form.
00197-12 | A. There is literature that claims that
00197-13 | they are, they are.
00197-14 | Q. And what are some examples of those
00197-15 | health effects?
00197-16 | A. Of free radicals?
00197-17 | Q. Correct.
00197-18 | A. Well, there is exercise-induced
00197-19 | damage to tissue because of the accumulation of
00197-20 | free radicals in tissues during exercise. That's
00197-21 | a theory.
00197-22 | There's a theory that some of the
00197-23 | damage produced in heart attack and stroke is
00197-24 | owing to free radicals produced in the body that
00197-25 | are from endogenous causes or from the cause of

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00198-01 | some kind of injury.
00198-02 | I think there is some, some
00198-03 | indication that free radicals may be involved in
00198-04 | certain kinds of heart disease.
00198-05 | It is certainly known that free
00198-06 | radicals are -- well, I have read and been told by
00198-07 | experts in the field that free radicals are
00198-08 | involved when white blood cells attack invading
00198-09 | organisms or exogenous chemicals within the body
00198-10 | and sometimes those kinds of processes can be out
00198-11 | of control and cause health problems.
00198-12 | Q. Was any of the research you
00198-13 | conducted at Reynolds geared towards reducing the
00198-14 | amount of free radicals that would be obtained by
00198-15 | a smoker during the smoking process?
00198-16 | MR. KREINER: Objection to the form.
00198-17 | A. We did some, I and people -- well,
00198-18 | people who reported to me and others did a lot of
00198-19 | research on trying to understand how to measure
00198-20 | free radicals in smoke and determining whether or
00198-21 | not there were any kinds of modifications we could
00198-22 | make to filters or to the smoking article itself,
00198-23 | whether it was the paper or the tobacco or
00198-24 | whatever, that would reduce the amounts of free
00198-25 | radicals that we were able to detect in these

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00199-01 | laboratory situations. And --
00199-02 | Q. Was it --
00199-03 | A. -- excuse me. And there were some
00199-04 | other kinds of experiments done with the use of
00199-05 | certain kinds of additives to tobacco and filters
00199-06 | that theoretically could have had an effect on
00199-07 | free radical concentrations, assuming there
00199-08 | actually were any.
00199-09 | Q. Was it an additional goal of some of
00199-10 | the research you conducted during your tenure at
00199-11 | Reynolds to reduce the presents presence of
00199-12 | potentially carcinogenic substance in cigarette --
00199-13 | substances in cigarette smoke?
00199-14 | MR. KREINER: Objection to the form.
00199-15 | A. There were lots of research -- there
00199-16 | was lots of research done with that goal, not just
00199-17 | mine.
00199-18 | Q. So there was research being

00199-19| conducted during your tenure at Reynolds which was
00199-20| designed to reduce the levels of compounds
00199-21| associated with disease which are found in
00199-22| cigarette smoke?
00199-23| MR. KREINER: Objection to the form.
00199-24| A. That's correct.
00199-25| Q. Was the Premier product developed

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00200-01| for this purpose?
00200-02| A. I think that part of the, part of
00200-03| the genesis of the Premier product had to do with,
00200-04| with that, yes.
00200-05| Q. Was the Alpha product developed for
00200-06| this cause?
00200-07| A. Well, the Alpha, the Alpha was the
00200-08| code name for the predecessor of Premier before
00200-09| Premier had a brand name.
00200-10| Q. And was Premier ever marketed to the
00200-11| public?
00200-12| A. It was in, I believe it was in test
00200-13| market. I can't recall whether it was in test
00200-14| market. I know it was in consumer testing. Now
00200-15| whether it was actually in a test market or not, I
00200-16| don't remember.
00200-17| Q. Was Premier ever mass marketed to
00200-18| the public?
00200-19| A. I don't think it was, aside from a
00200-20| test market I don't think it was ever mass
00200-21| marketed.
00200-22| Q. Do you agree that polycyclic
00200-23| aromatic hydrocarbons have been found to cause
00200-24| cancer in certain animals?
00200-25| A. Yes.

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00201-01| Q. And these substances are present in
00201-02| cigarette smoke?
00201-03| A. Some of them.
00201-04| Q. Do you know if anyone else at RJR
00201-05| believed this to be the case?
00201-06| MR. KREINER: Objection to the form.
00201-07| A. Which, believed what to be the case?
00201-08| Q. Well, one, that polycyclic aromatic
00201-09| hydrocarbons have been found to cause cancer in
00201-10| certain animals?
00201-11| A. There was ample literature that
00201-12| described polycyclic aromatic hydrocarbons and a
00201-13| lot of experiments on them at various dose levels
00201-14| in animals, and I know that people at R.J.
00201-15| Reynolds read that literature.
00201-16| Q. Do you believe that that fact was
00201-17| readily accepted -- well, strike that.
00201-18| Were those conclusions readily
00201-19| accepted by individuals at Reynolds?
00201-20| MR. DAVIS: Objection.
00201-21| MR. KREINER: Objection to the form.
00201-22| A. That in the particular experiments
00201-23| as described in the literature that polycyclic
00201-24| aromatic hydrocarbons could cause animals to get
00201-25| cancer tumors? Under the conditions that they

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00202-01| were described in those papers, yes, people knew
00202-02| that and they didn't -- I think they, they
00202-03| accepted it.

00202-04| Q. Do you know if Dr. Rodgman ever did
00202-05| any research on this issue?
00202-06| A. On what, which issue?
00202-07| Q. Polycyclic aromatic hydrocarbons and
00202-08| their causing cancer in certain animals.
00202-09| A. I don't know that Dr. Rodgman did
00202-10| research on polycyclic aromatic hydrocarbons
00202-11| causing cancer in animals.
00202-12| Q. Did you ever talk to Dr. Rodgman
00202-13| about this issue?
00202-14| A. I knew that Rodgman had worked with
00202-15| polycyclic aromatic hydrocarbons in smoke and in
00202-16| smoke condensate, and I might have had a, I
00202-17| probably did discuss it. I don't remember that he
00202-18| did any research on using those things in animals,
00202-19| though. I know that he did research on them in
00202-20| their occurrence in tobacco.
00202-21| MR. SAHAM: Could we mark this as
00202-22| Exhibit 17, please.
00202-23| (Deposition Exhibit No. 17
00202-24| was marked for identification and
00202-25| is bound separately.)

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00203-01| Q. Dr. Rodgman -- excuse me,
00203-02| Dr. Reynolds. I apologize. Could you please take
00203-03| a look at what has been marked as Exhibit 17.
00203-04| A. (Witness peruses document.)
00203-05| Q. And for the record, Exhibit 17 is
00203-06| entitled, "Report of Meeting," and on the top it
00203-07| says Weisburger Associates, North White Plains,
00203-08| New York. And this document bears side Bates Nos.
00203-09| 50615 3270 through 3274.
00203-10| A. (Witness peruses document.)
00203-11| Q. Dr. Reynolds, do you recognize what
00203-12| has been marked as Exhibit 17?
00203-13| A. I don't think I have seen this
00203-14| document before.
00203-15| Q. Do you notice that your name is --
00203-16| A. Yes.
00203-17| Q. -- listed as an attendee at this
00203-18| meeting?
00203-19| A. Yes.
00203-20| Q. Do you remember attending this
00203-21| meeting?
00203-22| A. Yes.
00203-23| Q. And when did this meeting take
00203-24| place, in August of 1997?
00203-25| A. Yes, to the best of my recollection,

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00204-01| that's when it was.
00204-02| Q. And this meeting, at this meeting
00204-03| the Premier project was discussed?
00204-04| A. Yes.
00204-05| Q. Would you describe the Premier
00204-06| cigarette as a safer cigarette?
00204-07| MR. KREINER: Objection to the form.
00204-08| A. Well, I, I'm not an expert in law
00204-09| that regards safety and implied warranties and all
00204-10| this stuff, so I don't know that one can
00204-11| characterize it as a safer cigarette. It
00204-12| certainly had reduced levels of lots of compounds
00204-13| that had been associated with human health
00204-14| problems.

00204-15| Q. So is it fair to say that the
00204-16| Premier cigarette was designed to reduce certain
00204-17| compounds which had been associated with ill
00204-18| health effects?

00204-19| MR. KREINER: Objection to the form.

00204-20| A. It was designed -- excuse me.

00204-21| First I have to say that I was not
00204-22| a, I was not actively involved in the design and
00204-23| research on the actual physical form of the Alpha
00204-24| product. But I believe that that was one of the
00204-25| major goals of the design of this product was to

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00205-01| reduce those compounds in smoke.

00205-02| Q. And this product was never mass
00205-03| marketed?

00205-04| MR. KREINER: Objection to the form.

00205-05| A. As far as I know, as I have said
00205-06| before, I don't think it was mass marketed.

00205-07| Q. I would like to draw your attention
00205-08| to the last paragraph of this document, entitled
00205-09| "Summary." In the middle of that paragraph the
00205-10| author states, "Thus, it seems evident that the
00205-11| user of Alpha product will be at low," and it
00205-12| looks like "end," but it is difficult to read, I
00205-13| don't know what it says, "be at low," and then an
00205-14| unreadable word, "any risk for conditions that
00205-15| previously were one of the major negative elements
00205-16| in users, especially problems," again unlegible,
00205-17| emphysema, respiratory tract abnormalities
00205-18| including neoplasia, and cancer and select other
00205-19| organs."

00205-20| Do you agree with the accuracy of
00205-21| that statement?

00205-22| MR. KREINER: Objection to the form.

00205-23| A. Well, I don't know who wrote this.
00205-24| I can guess who wrote it, but I don't know for
00205-25| sure who wrote it. I didn't write it.

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00206-01| This is his, this is the writer's
00206-02| opinion. My opinion is that it certainly, the
00206-03| Alpha product certainly was -- did have
00206-04| much-reduced levels of all of these compounds that
00206-05| are referenced herein versus conventional, well,
00206-06| versus tobacco burning cigarettes; and therefore,
00206-07| if one would accept the linkage between any of
00206-08| these and any human disease state, then the Alpha
00206-09| product should have presented a lower exposure to
00206-10| those and possibly less risk to the individual for
00206-11| those.

00206-12| Q. Who do you think wrote this
00206-13| document, Dr. Reynolds?

00206-14| A. I would have to guess who wrote it.
00206-15| I can give you my opinion if you would like to
00206-16| hear it. I think that John Weisburger wrote this
00206-17| document.

00206-18| Q. And who is John Weisburger?

00206-19| A. I believe John -- John Weisburger,
00206-20| I'm not sure if the man is still living. He was a
00206-21| very well-known toxicologist; and I believe that
00206-22| he had a toxicological consultation business and
00206-23| that he was known, very well-known in the
00206-24| toxicology area by Dr. Hayes, who was my boss at
00206-25| the time, and many of these other individuals here

00207-01 | who are toxicologists.
 00207-02 | And it was my understanding --
 00207-03 | although I can't, I can't tell you for sure --
 00207-04 | that he was, had been or was associated with the
 00207-05 | American Institute of health at Valhalla, New
 00207-06 | York.
 00207-07 | Q. And he was consulted?
 00207-08 | A. He was a consultant.
 00207-09 | Q. And he was, he was retained as a
 00207-10 | consultant in some capacity --
 00207-11 | A. As far as I can understand, he was,
 00207-12 | he was, he was asked to hear a series of
 00207-13 | presentations from the individuals listed here
 00207-14 | about the Alpha project and to render his opinion
 00207-15 | of it, and to also render an opinion as to any
 00207-16 | other things he thought ought to be done in terms
 00207-17 | of research on it.
 00207-18 | MR. SAHAM: Could you mark this as
 00207-19 | Exhibit 18, please.
 00207-20 | (Deposition Exhibit No. 18
 00207-21 | was marked for identification and
 00207-22 | is bound separately.)
 00207-23 | MR. SAHAM: For the record,
 00207-24 | Exhibit 18 is a document authored by John H.
 00207-25 | Reynolds dated March 5, 1976. And it bears side

00208-01 | Bates Nos. 50610 5818 through 5924 -- or actually
 00208-02 | that's 5825. I think I said 5924, but it's
 00208-03 | actually through 5825.
 00208-04 | (Witness peruses document.)
 00208-05 | BY MR. SAHAM:
 00208-06 | Q. Dr. Reynolds, do you recognize this
 00208-07 | document?
 00208-08 | A. Yes.
 00208-09 | Q. Is this a document which you
 00208-10 | authored?
 00208-11 | A. Yes, it is.
 00208-12 | Q. And is that your signature on the
 00208-13 | third page of this document?
 00208-14 | A. Above the words, "John H. Reynolds,"
 00208-15 | yes, it is.
 00208-16 | Q. And is this a document that you
 00208-17 | authored during the ordinary course of your
 00208-18 | business at Reynolds?
 00208-19 | A. Yes, it is.
 00208-20 | Q. And this document appears to have
 00208-21 | been witnessed when you signed it; is that
 00208-22 | correct?
 00208-23 | A. That's correct.
 00208-24 | Q. And why was it witnessed?
 00208-25 | A. This document is what is called a

00209-01 | "Conception of Invention Memorandum," that's what
 00209-02 | "CIM" stand for.
 00209-03 | Q. Uh-huh.
 00209-04 | A. At certain times during my tenure at
 00209-05 | RJR when one came up with a concept that could
 00209-06 | have product applications, you were encouraged to
 00209-07 | write a CIM for the purpose of documenting that
 00209-08 | you actually had this idea -- and that someone
 00209-09 | else would swear to the fact you had this idea and
 00209-10 | it wasn't somebody else's idea -- so that you

00209-11 | could support patent and/or issues or claims of
00209-12 | inventorship, et cetera. So that's why it was
00209-13 | witnessed.
00209-14 | Q. Is this document a description of
00209-15 | the Alpha product?
00209-16 | A. No.
00209-17 | Q. What is it a description of?
00209-18 | A. It is a description of exactly what
00209-19 | I say it is, an artificial smoking article that I
00209-20 | conceived in early 1976.
00209-21 | Q. Was this artificial smoking device
00209-22 | ever marketed by Reynolds?
00209-23 | A. No.
00209-24 | Q. I would like to draw your attention
00209-25 | to the first paragraph under, "Summary," the first

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00210-01 | sentence, "A reusable long-lived artificial
00210-02 | smoking article comprised of a heat source, heat
00210-03 | conducting means, a container or reservoir for
00210-04 | flavorants and/or physiologically active
00210-05 | materials, and a means for allowing volatilized
00210-06 | flavorants or other materials to be carried into
00210-07 | the mouth of the user is conceived."
00210-08 | What, what did you mean by,
00210-09 | "physiologically active materials"?
00210-10 | A. One of the, one of the things I had
00210-11 | in mind was, was nicotine; but there are other
00210-12 | physiologically active things that you can inhale.
00210-13 | Menthol is one, it has a cooling effect and so
00210-14 | forth, so it could be one.
00210-15 | Q. I'd like to draw your attention to
00210-16 | the next paragraph under, "Summary," where you
00210-17 | state, "A present trend of anti-smoking propaganda
00210-18 | is to make smoking appear to be a 'dirty' habit.
00210-19 | The present conception offers a means to supply
00210-20 | the smoker with what he or she wants in a clean,
00210-21 | elegant and non-polluting manner."
00210-22 | What did you mean by "anti-smoking
00210-23 | propaganda"?
00210-24 | A. I can't remember the exact things I
00210-25 | was thinking about in 1976. But there, there have

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00211-01 | been antismoking commercials that focussed in on
00211-02 | ash, smoke on your windshield, spilling ashes on
00211-03 | your clothing, having a dirty ashtray in your
00211-04 | office, that kind of thing. That's what I'm
00211-05 | talking about.
00211-06 | Q. Do you consider commercials and
00211-07 | other materials disseminated by antismoking groups
00211-08 | such as the American Lung Association and the
00211-09 | American Cancer Association to be propaganda?
00211-10 | A. Well --
00211-11 | MR. KREINER: Objection to the form.
00211-12 | A. Surely. "Surely" is not the answer
00211-13 | to the question, I was saying yes, I'm sorry.
00211-14 | Propaganda in and of itself means
00211-15 | spoken or written material that is intended to
00211-16 | persuade someone of a particular viewpoint. And
00211-17 | certainly a lot of antismoking materials were
00211-18 | intended to do that.
00211-19 | Q. In using the word "propaganda," you
00211-20 | are not inferring that these materials were false
00211-21 | or contained misstatements, are you?

00211-22| A. In the case of some of the ones
00211-23| where it showed Muriel Hemingway with cigarettes
00211-24| stuck in her ears and nose, I thought those were
00211-25| false and ridiculous. But as to characterize

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00212-01| scientific research conducted on a valid basis and
00212-02| published in the open literature, I would not
00212-03| characterize it as false.

00212-04| Q. But yet you would still refer to it
00212-05| as propaganda?

00212-06| MR. KREINER: Objection to the form.

00212-07| A. That wasn't your question. You
00212-08| asked me would I characterize everything that the
00212-09| American Smoking Association -- I mean American
00212-10| Health Association or the Lung Association
00212-11| published as propaganda were false? And I told
00212-12| you that I didn't think it was false.

00212-13| I told you there were certain
00212-14| instances in which I thought that there were at
00212-15| least overstatements of things about cigarette
00212-16| smoking and I regarded those as propaganda, yes.

00212-17| Q. Would you necessarily consider
00212-18| everything disseminated by antismoking groups to
00212-19| be propaganda?

00212-20| A. Not everything.

00212-21| Q. Some things?

00212-22| A. If you want to characterize --

00212-23| MR. KREINER: Objection to the form.

00212-24| A. -- as I stated, propaganda in and of
00212-25| itself only has to do with being interested in

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00213-01| making someone accept your viewpoint about
00213-02| something, loosely termed, anything that is
00213-03| published with that aim is propaganda.

00213-04| Narrowly termed, which I think is
00213-05| what you are getting at, with regard to whether or
00213-06| not the viewpoint that they espouse is untrue, I
00213-07| don't think that it was all propaganda, no.

00213-08| Q. Would you consider any materials
00213-09| disseminated by groups associated with the tobacco
00213-10| industry in the or dealing with the smoking
00213-11| question to be propaganda?

00213-12| MR. KREINER: Objection to the form.

00213-13| A. In terms of the two, the two narrow
00213-14| and broad definitions of the word, I suppose you
00213-15| might say that any advertisement that is not
00213-16| strictly based in fact is propaganda, so maybe
00213-17| some of it is.

00213-18| Q. Drawing your attention to the second
00213-19| sentence I just read in the second paragraph, "The
00213-20| present conception offers the means to supply the
00213-21| smoker with what he or she wants in a clean,
00213-22| elegant and nonpolluting manner."

00213-23| A. Uh-huh.

00213-24| Q. What did you feel that the smoker
00213-25| wants?

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00214-01| A. They wanted a cigarette that was
00214-02| clean, elegant and nonpolluting. And if they
00214-03| were -- if they happened to believe or felt like
00214-04| the propaganda, if you were to characterize it as
00214-05| such, about ash, dirt, mess, was something that
00214-06| was of concern to them and they didn't want it,

00214-07 | that's what I meant.
00214-08 | Q. Okay. But you say, "The present
00214-09 | conception offers the means to supply the smoker
00214-10 | with what he wants --"
00214-11 | A. Uh-huh.
00214-12 | Q. "-- in a clean, elegant and
00214-13 | nonpolluting manner."
00214-14 | A. Uh-huh.
00214-15 | Q. Are you saying what they wanted was
00214-16 | something that was clean and elegant, or did they
00214-17 | want something else and it would be provided in
00214-18 | that manner?
00214-19 | A. Presuming that this would act like a
00214-20 | cigarette or a pipe, which is what is described
00214-21 | here, if they wanted to smoke a cigarette or a
00214-22 | pipe, that would be their want; and this could
00214-23 | provide to it them in a clean, elegant and
00214-24 | nonpolluting manner.
00214-25 | Q. Is one of the components of what
----- PAGE00215 -----
00215-01 | they want is physiologically active materials?
00215-02 | A. It might be.
00215-03 | Q. Such as nicotine?
00215-04 | A. It might be.
00215-05 | Q. Dr. Reynolds, did you obtain a
00215-06 | patent for this device?
00215-07 | A. No.
00215-08 | Q. Did you submit an application for a
00215-09 | patent?
00215-10 | A. No, we didn't.
00215-11 | Q. Do you know why you didn't submit an
00215-12 | application for a patent?
00215-13 | A. This particular device described
00215-14 | the, as it mentions in here, the use of a heat
00215-15 | pipe, a particular kind of component that was
00215-16 | designed to transfer heat from the heat source to
00215-17 | the material to be devolatilized, and there
00215-18 | weren't heat pipes of the requisite kind
00215-19 | available.
00215-20 | Q. Did you ever --
00215-21 | A. So we couldn't, we could not make a
00215-22 | device like this that actually worked.
00215-23 | Q. Did Reynolds put any research into
00215-24 | developing a heat pump?
00215-25 | A. Heat pipe.
----- PAGE00216 -----
00216-01 | Q. Heat pipe such as what you would
00216-02 | require?
00216-03 | A. No.
00216-04 | Q. Dr. Reynolds, would you agree that
00216-05 | marketing cigarettes to youth is immoral?
00216-06 | MR. KREINER: Objection to the form.
00216-07 | A. If you mean little children, yes, it
00216-08 | is.
00216-09 | Q. To individuals under the age of 18
00216-10 | years old?
00216-11 | MR. DAVIS: Objection.
00216-12 | MR. KREINER: Same objection.
00216-13 | MR. DAVIS: Objection.
00216-14 | A. Well, I can only say that when I was
00216-15 | 16 years old it was legal to market cigarettes to
00216-16 | anybody. I don't know whether that was immoral or
00216-17 | not then. I would say at this point it is

00216-18| certainly illegal to market to under 18 and I
00216-19| don't think you should do it.
00216-20| Q. Would it concern you if you, if you
00216-21| learned that Reynolds was marketing cigarettes to
00216-22| individuals under the age of 18?
00216-23| MR. KREINER: Objection to the form.
00216-24| MR. DAVIS: Objection.
00216-25| A. It has been our policy not to do so,

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00217-01| so it would concern me if they did.
00217-02| Q. Would you find that upsetting?
00217-03| MR. KREINER: Objection the form.
00217-04| A. I would have to see what it was
00217-05| before I would say it was upsetting.
00217-06| THE WITNESS: Can we take a break
00217-07| now, have we got a minute?
00217-08| MR. DAVIS: That's fine, we have
00217-09| been going a while.
00217-10| THE VIDEOGRAPHER: Off the record at
00217-11| 3:50.
00217-12| (Brief recess.)
00217-13| THE VIDEOGRAPHER: Back on the
00217-14| record at 4:02.
00217-15| MR. SAHAM: Exhibit 18?
00217-16| THE REPORTER: 19 is the next one.
00217-17| MR. SAHAM: Mark this as Exhibit 19,
00217-18| please.
00217-19| (Deposition Exhibit No. 19
00217-20| was marked for identification and
00217-21| is bound separately.)
00217-22| MR. SAHAM: For the record,
00217-23| Exhibit 19 is a document entitled, "Human Urine
00217-24| Mutagenicity Study Comparing Cigarettes Which Burn
00217-25| or Only Heat Tobacco." And this document is Bates

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00218-01| range 50679 4005 through 50679 4039.
00218-02| Dr. Reynolds, could you please take
00218-03| a look at this document.
00218-04| A. (Witness peruses document.)
00218-05| Q. Dr. Reynolds, do you recognize this
00218-06| document?
00218-07| A. Yes.
00218-08| Q. And were you indeed one of the
00218-09| authors of this document?
00218-10| A. Yes.
00218-11| Q. And could you briefly describe what
00218-12| the document is?
00218-13| A. It describes a comparison of the
00218-14| Alpha, an Alpha cigarette prototype, to a
00218-15| tobacco-burning cigarette that was about the same
00218-16| yield of tar and nicotine. And the end points
00218-17| included the determination of the mutagenicity of
00218-18| the urine of the smokers of these products.
00218-19| Q. And is this a document you prepared
00218-20| in the regular course of your employment at R.J.
00218-21| Reynolds?
00218-22| A. Yes.
00218-23| Q. I draw your attention to the last
00218-24| two sentences of the second page under the
00218-25| abstract where you or in concert with the other

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00219-01| authors state, "Individuals who smoked the test
00219-02| cigarette voided urine which was significantly

00219-03 | less mutagenic than that is voided when they
00219-04 | smoked reference cigarettes."
00219-05 | The test cigarette is the Alpha
00219-06 | cigarette?
00219-07 | A. That's correct.
00219-08 | Q. And then you go on to state,
00219-09 | "Mutagenicity of urine from smokers who smoked the
00219-10 | test cigarette and nonsmokers did not differ under
00219-11 | any of the assay conditions used in this study."
00219-12 | Is that correct?
00219-13 | A. That's correct.
00219-14 | Q. Would you consider the Alpha
00219-15 | cigarette to be a healthier cigarette than the
00219-16 | reference cigarette?
00219-17 | MR. KREINER: Objection to the form.
00219-18 | A. I believe I answered that question
00219-19 | before, that the Alpha cigarette, which was the
00219-20 | prototype for the Premier product, had less of
00219-21 | many cigarette smoke components in the smoke
00219-22 | thereof that had been linked to or associated with
00219-23 | human disease.
00219-24 | Q. Could I draw your attention to the
00219-25 | bottom paragraph on Page 18, where you state, "The

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00220-01 | results of this study clearly show that smokers
00220-02 | who smoke cigarettes which heat but do not burn
00220-03 | tobacco voided urine which was less mutagenic than
00220-04 | that void when smoking the reference cigarette
00220-05 | which burned tobacco. In fact, smokers of the
00220-06 | test cigarette voided urine which was no different
00220-07 | in mutagenicity from urine voided by non-smokers.
00220-08 | These results are in agreement with in vitro
00220-09 | studies (Doolittle et al., 1988) indicating that
00220-10 | smoke condensate from the new cigarette is not
00220-11 | mutagenic as measured in the test systems used."
00220-12 | Is that correct?
00220-13 | A. As far as I know, that's correct,
00220-14 | yes.
00220-15 | Q. And this is recapping research which
00220-16 | you were involved in; is that correct?
00220-17 | A. The study described in the article
00220-18 | that we are talking about, this document
00220-19 | (indicating), is research in which I was involved.
00220-20 | The study, in vitro studies conducted by Doolittle
00220-21 | et al were not studies that I was involved in.
00220-22 | Q. Do you have anything that would lead
00220-23 | you to believe that this is not a true and
00220-24 | accurate copy of the document that you prepared in
00220-25 | or during your employment with R.J. Reynolds?

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00221-01 | MR. DAVIS: Objection.
00221-02 | A. This may be a draft and I may not
00221-03 | have seen this same draft. And it may not be --
00221-04 | this draft may not be the same as the article that
00221-05 | was published that was based on this draft. But
00221-06 | given those stipulations and not having time to
00221-07 | peruse it absolutely completely, I believe that it
00221-08 | is genuine.
00221-09 | Q. And where was this article
00221-10 | eventually published?
00221-11 | A. I know -- I'm virtually certain this
00221-12 | article was published in the book that was put out
00221-13 | by R.J. Reynolds Tobacco on the results of studies

00221-14| on the Alpha project, which book was circulated to
00221-15| everybody and his brother, all the health
00221-16| community, all the major players in the health
00221-17| community, all the members of Congress, as far as
00221-18| I know. And I don't know who else had access to
00221-19| it.

00221-20| I'm not sure whether this particular
00221-21| article was published in this, in this exact form
00221-22| in the scientific literature or not, but it might
00221-23| have been. And if it was, I probably have a
00221-24| reprint of it in that box over there.

00221-25| Q. And the study was then you would

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00222-01| consider it publicly available or publicly
00222-02| disseminated?

00222-03| A. Oh, yes, it was certainly publicly
00222-04| available.

00222-05| MR. SAHAM: Could we mark this as
00222-06| Exhibit 20, please.

00222-07| (Deposition Exhibit No. 20
00222-08| was marked for identification and
00222-09| is bound separately.)

00222-10| MR. SAHAM: For the record,
00222-11| Exhibit 20 is, appears to be a plan for a nicotine
00222-12| research in R&D, and it bears side Bates Nos.
00222-13| 50779 5229 through 5364.

00222-14| MR. KREINER: Objection to what the
00222-15| document appears to be.

00222-16| (Witness peruses document.)

00222-17| MR. SAHAM: May we go off the record
00222-18| while he's doing this?

00222-19| MR. KREINER: Sure.

00222-20| THE VIDEOGRAPHER: Off the record at
00222-21| 4:19.

00222-22| (Brief recess.)

00222-23| THE VIDEOGRAPHER: Back on the
00222-24| record at 4:23.

00222-25| BY MR. SAHAM:

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00223-01| Q. Dr. Reynolds, have you reviewed what
00223-02| has been marked as Exhibit 20?

00223-03| A. I have looked through it as best I
00223-04| could, given the voluminous nature of it.

00223-05| Q. Do you recognize this document?

00223-06| A. I don't know that I have ever seen
00223-07| this particular compilation of all this material.

00223-08| Q. Is this something that seems to have
00223-09| been disseminated within the R&D Department at
00223-10| Reynolds during your tenure there?

00223-11| MR. KREINER: Objection.

00223-12| A. I don't know whether it was
00223-13| disseminated throughout R&D or whether it was put
00223-14| together for someone to review, somebody in
00223-15| management to review.

00223-16| Q. I turn your attention to what has
00223-17| been marked as side Bates range -- and that's the,
00223-18| when you hold the paper up like this down the
00223-19| right side, when you hold the paper the long way,
00223-20| the right side -- what has been marked as the last
00223-21| four digits 5238.

00223-22| A. Uh-huh.

00223-23| Q. Under the "REST Process," it states,
00223-24| "Wide range of nicotine levels achievable."

|00223-25| A. Uh-huh.

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|00224-01| Q. Do you think that statement
|00224-02| accurately describes the REST process?

|00224-03| A. As I described before, the REST
|00224-04| process was able to take aqueous extracts of
|00224-05| tobacco and perform all kinds of manipulations,
|00224-06| all kinds of processes on them, including
|00224-07| extraction of nicotine and so forth and so on, and
|00224-08| then you could add it back to tobacco. So you
|00224-09| could, if you wanted to, you could put more or
|00224-10| less nicotine back on to your existing tobacco
|00224-11| with that process.

|00224-12| Q. And you can obtain wide ranges of
|00224-13| nicotine through that process?

|00224-14| MR. KREINER: Objection to the form.

|00224-15| A. I don't know what, you know, how to
|00224-16| characterize exactly "wide," but you could, you
|00224-17| could change the amount of nicotine that was on
|00224-18| the tobacco.

|00224-19| Q. Is the same true of the G7 process,
|00224-20| that you could obtain ranges of nicotine in the
|00224-21| tobacco?

|00224-22| MR. KREINER: Objection to the form.

|00224-23| A. As I told you before, I don't, I'm
|00224-24| not a G7 expert; I don't know what, what ranges
|00224-25| could be achieved. I don't know that it was ever

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|00225-01| used for changing ranges of nicotine. I
|00225-02| understood that the extract went back to the
|00225-03| tobacco from the G7 process.

|00225-04| Q. By putting it back on to the
|00225-05| tobacco, couldn't that change the existing level
|00225-06| of nicotine in that particular tobacco?

|00225-07| MR. KREINER: Objection to the form.

|00225-08| A. My understanding was that whatever
|00225-09| the extract, that the tobacco, it's a continuous
|00225-10| process so it's hard to say what goes where. But
|00225-11| the tobacco become in one end of it, gets
|00225-12| extracted, goes through all this process and all
|00225-13| the stuff goes on and comes out the other end.

|00225-14| Q. So, by putting stuff back on it --

|00225-15| A. The stuff that was -- all the stuff
|00225-16| that came off with the exception of the water that
|00225-17| was used to do the extraction ended back in the
|00225-18| tobacco to the best of my knowledge.

|00225-19| Q. But if you didn't use the G7
|00225-20| process, what was taken off the tobacco would
|00225-21| result in a lower, a lower range of nicotine than
|00225-22| what resulted when you took the G7 residue or
|00225-23| whatever you are going to call it and put it back
|00225-24| in; is that correct?

|00225-25| MR. KREINER: Objection to the form.

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|00226-01| A. I don't know that you could actually
|00226-02| do that. I mean, the process was designed to put
|00226-03| this stuff back on to make the paper out of -- to
|00226-04| make this paper sheet. So I don't know that that
|00226-05| was actually doable.

|00226-06| Q. This KDN process that is described
|00226-07| on the same page under the REST process?

|00226-08| A. Right.

|00226-09| Q. Is that the denicotinization process

00226-10 | we discussed later?
00226-11 | A. Yes, that's the burley
00226-12 | denicotinization process.
00226-13 | Q. I would like to draw your attention
00226-14 | to side Bates range, the last four digits 5244 --
00226-15 | I'm sorry, not 5244, 5245.
00226-16 | A. Okay.
00226-17 | Q. Where it states,
00226-18 | "Analytical/Physical. ETS nicotine methods.
00226-19 | Delineation between salt and free-base nicotine."
00226-20 | A. Uh-huh.
00226-21 | Q. Does this describe any of the
00226-22 | processes we discussed earlier; and, if so, which
00226-23 | one?
00226-24 | MR. KREINER: Objection to the form.
00226-25 | A. I don't know that it has a

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00227-01 | relationship to any of those processes we talked
00227-02 | about.
00227-03 | Q. Do you know what is being discussed
00227-04 | here?
00227-05 | A. Not really. I mean, I could guess
00227-06 | but I don't want to guess.
00227-07 | Q. And we don't want you to guess.
00227-08 | I would like to draw your attention
00227-09 | to last four digits 5248 talking about the
00227-10 | nicotine RSM study. Under that, it says,
00227-11 | "Objective. Begin to develop an understanding of
00227-12 | satisfaction in actionable product development
00227-13 | terms to improve RJR position in the marketplace."
00227-14 | A. Right.
00227-15 | Q. Would you agree that to improve RJR
00227-16 | position in the marketplace was certainly a goal
00227-17 | of the R&D Department during your tenure there?
00227-18 | A. Yes.
00227-19 | MR. KREINER: Objection to the form.
00227-20 | Q. Turning your attention to the next
00227-21 | page, Bates number 5249, talking about again the
00227-22 | nicotine RSM study. Under, "Background," the
00227-23 | third bullet point, "Independent manipulation of
00227-24 | nicotine will result in a better understanding
00227-25 | than ever before of satisfaction,

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00228-01 | pharmacologically, physiologically and taste."
00228-02 | Do you know what is being referred
00228-03 | to here with respect to "independent manipulation
00228-04 | of nicotine"?
00228-05 | A. It's talking about produce,
00228-06 | producing the -- let me rephrase that.
00228-07 | We're talking about an RSM study,
00228-08 | which means "response service methodology," in
00228-09 | which one selects a number of variables that you
00228-10 | are going to systematically change and then you
00228-11 | are going to statistically look at the results and
00228-12 | see if can you see if, by changing any of those
00228-13 | variables, you were able to affect any of the end
00228-14 | points, the measurements you happened to make.
00228-15 | And what we are talking about here
00228-16 | is the possibility of looking at the effect of
00228-17 | nicotine as independent from tar and whatever the,
00228-18 | and draft, which is the resistance of the draw of
00228-19 | the cigarette, independently of one another in the
00228-20 | responses of smokers to these experimental

00228-21| products.
00228-22| Q. And what specifically is referred to
00228-23| as the manipulation of nicotine, how is that --
00228-24| A. That's, when we talk about the
00228-25| independent manipulation of nicotine in regard to

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00229-01| a RSM study, you're talking about I'm going to
00229-02| systematically vary the level of nicotine in a,
00229-03| that is contained within a product; and I'm also
00229-04| going to systematically change the draft or the
00229-05| resistance to draw of the product; an I'm also
00229-06| going to independently systematically change the
00229-07| tar yield of the products; and then I'm going to
00229-08| let whatever happens to them happen and we'll see
00229-09| what the results are.

00229-10| Q. I would look to draw your attention
00229-11| to the last bullet point on the same page, where
00229-12| it states, "The REST process allows for
00229-13| independent manipulation of nicotine and 'tar.'
00229-14| This, in turn allows product developers to
00229-15| manipulate draft in a reasonably independent
00229-16| fashion."

00229-17| A. Right.

00229-18| Q. Is it correct that the REST process
00229-19| would allow for independent manipulation of
00229-20| nicotine and tar?

00229-21| A. The REST process allowed one to
00229-22| extract material from tobacco, do chemistry on the
00229-23| extract, and put the extract back on the tobacco.
00229-24| If one of the things you did to the extract was
00229-25| take out nicotine, then yeah, you could change the

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00230-01| amount of nicotine.

00230-02| Q. Are you aware as to whether or not
00230-03| the REST process has ever, has ever been used in
00230-04| RJR manufacturing process?

00230-05| A. To the best of my knowledge it has
00230-06| not.

00230-07| Q. Any, any similar process?

00230-08| MR. KREINER: Objection to the form.

00230-09| A. The most similar process I can think
00230-10| of was the denic process, which was used to remove
00230-11| nicotine from burley tobacco, which we have
00230-12| already discussed.

00230-13| Q. The KND process?

00230-14| A. The KDN process.

00230-15| Q. The KDN process. Was the REST
00230-16| process, would you say that is similar to the G7
00230-17| process?

00230-18| A. No.

00230-19| Q. In your opinion, does the G7 process
00230-20| allow for the manipulation of nicotine?

00230-21| MR. KREINER: Objection to the form.

00230-22| A. As far as I know, the G7 process was
00230-23| used to manufacture the reconstituted sheet. That
00230-24| different kinds of tobacco were used because that
00230-25| was what the raw material was. So you had all

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00231-01| this big mixture of all kinds of tobaccos, scrap
00231-02| and dust -- tobacco dust -- that was extracted and
00231-03| ground up and treated until it was basically soupy
00231-04| goop, tossed on this big screen, the extract that
00231-05| was taken off goes back on to it, gets dried, and

00231-06 | out the other end comes paper.
00231-07 | So to the extent that you take this
00231-08 | lot of homogeneous kinds of tobacco, because it
00231-09 | came from a lot of sources which may or may not
00231-10 | have all started out with the same level of
00231-11 | nicotine, you know. You mix them all together;
00231-12 | you homogenize them into this hopefully uniform
00231-13 | sheet and put the stuff back on; then you have a
00231-14 | thing that in the end is not the same as what went
00231-15 | in, you know, in a, in a detailed fashion.

00231-16 | Q. So the level of nicotine has then
00231-17 | changed in that final tobacco product?

00231-18 | A. If, you, well --

00231-19 | MR. KREINER: Objection --

00231-20 | A. -- probably not in toto. That is,
00231-21 | if you took all the tobacco you started with, you
00231-22 | took all the nicotine out of that and measured
00231-23 | that and said, "Okay, here's the mass of tobacco
00231-24 | and here's the mass of nicotine," and you ended up
00231-25 | in the end putting it all back together, it would

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00232-01 | be the same.

00232-02 | But if you had taken one of those
00232-03 | ingredients, one of those kinds of tobacco that
00232-04 | went in as scrap and said, "Okay, I'm going to
00232-05 | analyze this," it could have been different. It
00232-06 | could have been more or less.

00232-07 | Q. So the fact it could be more or
00232-08 | less, does that, does that mean to you that the G7
00232-09 | process does allow some level of manipulation of
00232-10 | the nicotine content of the final product?

00232-11 | MR. DAVIS: Objection.

00232-12 | MR. KREINER: Objection to the form.

00232-13 | A. I think that's a real stretch.
00232-14 | Because You're taking a bunch of ingredients and
00232-15 | you're kind of mixing them up and saying because
00232-16 | Ingredient A and Ingredient B were different when
00232-17 | they were separate and now they're in Object X
00232-18 | that's a mixture of the two and they're, you know,
00232-19 | they're now different than they were to start
00232-20 | with, I think that's a stretch to say that was a
00232-21 | manipulation of the nicotine level. I don't, I
00232-22 | don't, I wouldn't say that it was.

00232-23 | Q. But you would agree that it is a
00232-24 | change -- of, of the manufacturer's ability to
00232-25 | change that level of nicotine?

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00233-01 | MR. KREINER: Objection to the form.

00233-02 | A. No. What I said was, the
00233-03 | ingredients that go into it that might be
00233-04 | different. It's like baking a cake. You take the
00233-05 | eggs, milk and flour and you come out with a cake.
00233-06 | It's not eggs, milk and flour any more, it's a
00233-07 | mixture of all those things.

00233-08 | The eggs, milk and flour don't have
00233-09 | the same amounts of whatever kind of compounds are
00233-10 | in them that are common when they start; and when
00233-11 | you end up with the homogeneous cake in the end,
00233-12 | they do. So that's what I'm trying to get across.

00233-13 | Q. But without the G7 process, if you
00233-14 | didn't, everything that was all the scrap,
00233-15 | tobacco --

00233-16 | A. Yeah.

00233-17| Q. -- if that wasn't in fact
00233-18| reconstituted into a tobacco sheet and then added
00233-19| back into the process, back into the final
00233-20| product -- without that process, the nicotine
00233-21| yield of the tobacco that would go through the
00233-22| manufacturing process would then be less; is that
00233-23| not correct?

00233-24| MR. KREINER: Objection to the form.
00233-25| A. Would depend on the kind of tobacco.

----- PAGE00234 -----

00234-01| If I used -- well, it would depend on the kind of
00234-02| tobacco that you are talking about that went into
00234-03| the process as scrap versus what would have been
00234-04| used if it wasn't scrap.

00234-05| Q. Well if you, if you took the process
00234-06| without scrap and didn't utilize the scrap at all,
00234-07| correct, and you just put the tobacco through the
00234-08| process, the yield would be lower than what it was
00234-09| using the G7 process to take the scrap and put it
00234-10| back into the final tobacco product?

00234-11| A. If you didn't --

00234-12| MR. KREINER: Objection the form of
00234-13| the question.

00234-14| A. Sorry, I don't understand what that
00234-15| question is.

00234-16| Q. If you, if you took, if you are
00234-17| manufacturing, you know, your end product and you
00234-18| just went through without the G7 process you're
00234-19| going to get tobacco that yields a certain level
00234-20| of nicotine, correct?

00234-21| A. Every -- but those cigarettes, by
00234-22| the end product, do you mean cigarettes?

00234-23| Q. Yes.

00234-24| A. Okay. They are made up of a whole
00234-25| bunch of different kinds of tobacco to start with.

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00235-01| They're not homogeneous. There's different,
00235-02| there's different grades, there's different kinds
00235-03| of tobacco, there's different crop years, there's
00235-04| lots of differences.

00235-05| They are all mixed up together to
00235-06| cause the product to be whatever it is,
00235-07| independent of whether there is any sheet in there
00235-08| or not.

00235-09| Q. But my question is, without the,
00235-10| without the, the G7 -- strike that.

00235-11| The G7 process allows the
00235-12| manufacturer to use a reconstituted sheet to add
00235-13| to the nicotine content of the tobacco or that the
00235-14| tobacco would otherwise have without that process;
00235-15| is that correct?

00235-16| MR. KREINER: Objection to the form.

00235-17| A. My answer to that is no. The
00235-18| reconstituted tobacco sheet is utilized as if it
00235-19| was a kind of tobacco.

00235-20| It's used, chopped up into shreds,
00235-21| mixed with all the other tobacco. And, and what
00235-22| it basically is is a way to use scrap materials
00235-23| that would ordinarily be thrown away but that has
00235-24| been paid for at the same price that non-scrap
00235-25| materials were bought at.

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00236-01| It's a, it's a way to use, to save

00236-02| money, basically.
00236-03| Q. Does the REST process involve the
00236-04| use of an ammonia compound?
00236-05| A. It could. Though I think we
00236-06| discussed an instance of that earlier.
00236-07| Q. Does the KDN -- or KND process?
00236-08| A. KDN.
00236-09| Q. Does the KDN process involve the use
00236-10| of an ammonia compound?
00236-11| A. I'm not a, I'm not a KDN process
00236-12| expert. My believe is that it does use, there is
00236-13| ammonia used in that process.
00236-14| Q. Does the G7 process use an ammonia
00236-15| compound?
00236-16| A. I believe earlier we discussed some
00236-17| G7 sheets that DAP had been added to, I'm not
00236-18| sure; but I know that you can put DAP on it.
00236-19| Now whether it, whether ammonia is
00236-20| used in every -- in fact, I think I know. Well, I
00236-21| believe that not every variant of the G7 process
00236-22| involves the use of ammonia. There are some that
00236-23| might.
00236-24| MR. SAHAM: I have no further
00236-25| questions.

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00237-01| MR. KREINER: I just have a few
00237-02| questions, Dr. Reynolds, and it relates to your
00237-03| education areas of expertise.
00237-04| EXAMINATION
00237-05| BY MR. KREINER:
00237-06| Q. Please tell us again what's your
00237-07| undergraduate degree?
00237-08| A. My undergraduate degree was in
00237-09| chemistry and mathematics.
00237-10| Q. Your PhD?
00237-11| A. My PhD was in physical chemistry.
00237-12| Q. Okay. You are not or you do not
00237-13| claim to be an expert in biology?
00237-14| A. No, I do not.
00237-15| Q. You are not an expert in
00237-16| biochemistry?
00237-17| A. No, I'm not.
00237-18| Q. You're not an expert in psychology?
00237-19| A. No, I'm not.
00237-20| Q. You're not an expert in physiology?
00237-21| A. No, I'm not.
00237-22| Q. You're not an expert in
00237-23| pharmacology?
00237-24| A. No.

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00238-01| Q. Not an expert in oncology?
00238-02| A. No.
00238-03| Q. You're not an expert in
00238-04| epidemiology?
00238-05| A. No.
00238-06| Q. You're not an expert in disease
00238-07| causation?
00238-08| A. No.
00238-09| Q. And you're not an expert in
00238-10| marketing?
00238-11| A. No.
00238-12| Q. And you are not an expert in the
00238-13| law, are you?

00238-14| A. No.
00238-15| MR. KREINER: I have nothing
00238-16| further.
00238-17| REEXAMINATION
00238-18| BY MR. SAHAM:
00238-19| Q. Dr. Reynolds just a couple
00238-20| additional questions. You do hold a PhD in
00238-21| chemistry, is that correct?
00238-22| A. Yes.
00238-23| Q. How many years were you employed in
00238-24| the Research and Development Department of R.J.

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00239-01| Reynolds?
00239-02| A. April 1968 to December 1996, which
00239-03| should be 28 years and some odd months.
00239-04| Q. And your main duties during that
00239-05| period was research work relating to tobacco
00239-06| products; is that correct?
00239-07| MR. KREINER: Objection to the form.
00239-08| A. Yes.
00239-09| Q. And how many articles did you
00239-10| publish as a result of your tenure at Reynolds?
00239-11| A. I don't remember.
00239-12| Q. Numerous articles?
00239-13| A. Numerous.
00239-14| Q. Numerous articles relating to
00239-15| tobacco products?
00239-16| MR. KREINER: Objection to the form.
00239-17| A. Several articles relating to tobacco
00239-18| products, yes; and some, if you want to call, I
00239-19| classify patents as articles, so there were lots
00239-20| of patents.
00239-21| Q. So you obtained several patents or
00239-22| numerous patents as a result of your employment?
00239-23| A. Several patents, yes.
00239-24| MR. SAHAM: I have no further
00239-25| questions.

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00240-01| MR. KREINER: I don't either.
00240-02| THE VIDEOGRAPHER: We're off the
00240-03| record at 4:43.
00240-04| MR. DAVIS: He'll waive reading and
00240-05| signing.
00240-06| (TIME NOTED: 4:43 P.M.)
00240-07| (SIGNATURE WAIVED BY THE WITNESS.)

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00241-01| CERTIFICATE OF REPORTER
00241-02| STATE OF NORTH CAROLINA)
00241-03| COUNTY OF MECKLENBURG)
00241-04| I, Sydney C. Silva, the officer before
00241-05| whom the foregoing deposition was taken, do hereby
00241-06| certify that the witness whose testimony appears
00241-07| in the foregoing deposition was duly sworn by me;
00241-08| that the testimony of said witness was taken by me
00241-09| to the best of my ability and thereafter reduced
00241-10| to typewriting under my direction; that I am
00241-11| neither counsel for, related to, nor employed by
00241-12| any of the parties to the action in which this
00241-13| deposition was taken, and further that I am not a
00241-14| relative or employee of any attorney or counsel
00241-15| employed by the parties thereto, nor financially
00241-16| or otherwise interested in the outcome of the
00241-17| action.

00241-18 | SYDNEY C. SILVA
00241-19 | Registered Professional Reporter
00241-20 | Notary Public in and for the
00241-21 | County of Mecklenburg
00241-22 | State of North Carolina
00241-23 | My Commission expires May 16, 2001.

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00242-01 | I N D E X
00242-02 | VOLUME I
00242-03 | WEDNESDAY, JANUARY 6, 1999
00242-04 | WITNESS EXAMINATION
00242-05 | JOHN H. REYNOLDS, IV
00242-06 | (By Mr. Saham) 4
00242-07 | (By Mr. Saham) 126
00242-08 | (By Mr. Kreiner) 237
00242-09 | (By Mr. Saham) 238

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00243-01 | DEPOSITION EXHIBITS
00243-02 | JOHN H. REYNOLDS, IV
00243-03 | NUMBER DESCRIPTION IDENTIFIED
00243-04 | 1 Deposition of John Reynolds 6
00243-05 | IV on July 16 and 17, 1997, in
00243-06 | Steven R. Arch, et al., vs. The
00243-07 | American Tobacco Company, Inc.
00243-08 | et al., 96CV-5903, U.S. District
00243-09 | Court, Eastern District of
00243-10 | Pennsylvania, Side Bates Nos.
00243-11 | 51710 0115 - 51710 0728
00243-12 | (NOTE: Entire exhibit attached
00243-13 | to original copy of deposition.
00243-14 | Copy of Page 1 only attached
00243-15 | to copies of deposition.)
00243-16 | 2 Interoffice Memorandum from 13
00243-17 | Mary E. Stowe and J.P. Dickerson
00243-18 | to Sensory Modeling Committee,
00243-19 | May 5, 1983, Side Bates No.
00243-20 | 50387 3749 and 50387 3750

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00244-01 | DEPOSITION EXHIBITS (CONTINUED)
00244-02 | JOHN H. REYNOLDS, IV
00244-03 | NUMBER DESCRIPTION IDENTIFIED
00244-04 | 3 RJR Interoffice Memorandum 37
00244-05 | from Ms. Rhenda Steele and Dr.
00244-06 | Scott Appleton to Ms. Carolyn
00244-07 | R. Carpenter, November 5, 1986,
00244-08 | Bates Nos. RJM 071543 - 071544
00244-09 | 4 R&D Project Outline No. 83-C, 52
00244-10 | 5/11/83, Author J.H. Reynolds,
00244-11 | Side Bates Nos. 50604 7625 and
00244-12 | 50604 7626
00244-13 | 5 Interoffice Memorandum from 61
00244-14 | J.H. Reynolds to G.H. Long,
00244-15 | December 17, 1982, Side Bates
00244-16 | Nos. 50298 3100 and 50298 3101

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00245-01 | DEPOSITION EXHIBITS (CONTINUED)
00245-02 | JOHN H. REYNOLDS, IV
00245-03 | NUMBER DESCRIPTION IDENTIFIED
00245-04 | 6 Interoffice Memorandum from 69
00245-05 | Rhenda H. Steele to John E.
00245-06 | Stewart, August 23, 1991, Side
00245-07 | Bates Nos. 50988 7060, 50988
00245-08 | 7061, 50988 7084, 50988 7181,

00245-09		50988 7264, 50988 9290, 50990	
00245-10		1845, 50991 6503	
00245-11	7	Interoffice Memorandum from	98
00245-12		A.B. Norman and J.H. Reynolds	
00245-13		to Distribution, Bottom Bates	
00245-14		Nos. RJM003311 - RJM003314	
00245-15	8	Memo to Dr. A.W. Hayes from	126
00245-16		J.H. Reynolds, 9/28/90, Side	
00245-17		Bates Nos. 50804 1183 and	
00245-18		50804 1184	

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00246-01	DEPOSITION EXHIBITS (CONTINUED)		
00246-02	JOHN H. REYNOLDS, IV		
00246-03	NUMBER	DESCRIPTION	IDENTIFIED
00246-04	9	Interoffice Memorandum from	144
00246-05		J.H. Reynolds to Dr. Alan	
00246-06		Rodgman, June 8, 1982, Side	
00246-07		Bates Stamp No. 50283 8981	
00246-08	10	Interoffice Memorandum from	148
00246-09		J. H. Reynolds to Dr. Alan	
00246-10		Rodgman, 25 July 1983, bottom	
00246-11		Bates No. RJM025806	
00246-12	11	RJR Inter-Office Memorandum	152
00246-13		from Watson M. Dufour to Dr.	
00246-14		G.R. Di Marco, July 9, 1992,	
00246-15		Side Bates Nos. 50804 1607 -	
00246-16		50804 1609	
00246-17	12	RJR Memo from C. L. Neumann	158
00246-18		to Dr. R.A. Lloyd, January 6,	
00246-19		1981, Side Bates Nos. 50933	
00246-20		8985 - 50933 8987	

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00247-01	DEPOSITION EXHIBITS (CONTINUED)		
00247-02	JOHN H. REYNOLDS, IV		
00247-03	NUMBER	DESCRIPTION	IDENTIFIED
00247-04	13	Product Differential Group,	163
00247-05		the Over-Smoking Issue, Side	
00247-06		Bates Nos. 50897 8013 - 50897	
00247-07		8025	
00247-08	14	Interoffice Memorandum from	177
00247-09		David Gilbert to John Reynolds,	
00247-10		August 8, 1985, Side Bates Nos.	
00247-11		50802 6977 - 50802 6979	
00247-12	15	Interoffice Memorandum from	184
00247-13		Alan Rodgman to Dr. Chin K.	
00247-14		Lee, October 11, 1978, Side	
00247-15		Bates No. 50196 5584	
00247-16	16	A Frank Statement to	190
00247-17		Cigarette Smokers, Bates No.	
00247-18		SHS 001555	

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00248-01	DEPOSITION EXHIBITS (CONTINUED)		
00248-02	JOHN H. REYNOLDS, IV		
00248-03	NUMBER	DESCRIPTION	IDENTIFIED
00248-04	17	Report of Meeting, Weisburger	202
00248-05		Associates, N. White Plains,	
00248-06		NY, Side Bates Nos. 50615 3270	
00248-07		- 50615 3274	
00248-08	18	Artificial Smoking Article,	207
00248-09		by John H. Reynolds, March 5,	
00248-10		1976, Side Bates Nos. 50610	
00248-11		5818 - 50610 5825	
00248-12	19	Human Urine Mutagenicity Study	217

00248-13		Comparing Cigarettes Which	
00248-14		Burn or Only Heat Tobacco,	
00248-15		Side Bates Nos. 50679	
00248-16		4005 - 50679 4039	
00248-17	20	Overview, Nicotine Research	222
00248-18		in R&D, Side Bates Nos. 50779	
00248-19		5229 - 50779 5364	